Enterprise Rent-A-Car tries .Net Terminal Services. PAGE 30

Five tips for heading off abuse by consultants. PAGE 44

IDG.net

COMPUTERWORLD

THE NEWSPAPER FOR IT LEADERS WWW.COMPUTERWORLD.COM

JANUARY 13, 2003 VOL. 37 NO. 2 $5 COPY

Energy Market Revamp Pushes $79M IT Effort

Wholesale electricity firm tries to get jump on standardizing data

BY THOMAS HOFFMAN

HOLYOKE, MASS.

Federal efforts to create a standardized, nationwide wholesale electricity market have prompted ISO New England Inc. to jump ahead of the regulatory curve and invest $79 million in a system redesign that's scheduled to go live March 1.

ISO New England, a not-for-profit corporation that over-

Energy Market, page 16

TECHNOLOGY DETAILS

ISO New England's System Architecture

The new energy market system includes hardware and software for design, testing and production purposes

- **The production system** is powered by 400-plus servers, with 8 HP AlphaServer GS160 models running Tru64 Unix.
- **The system includes** Oracle databases and will run a set of mostly Java-based back-end applications.
- **Object broker technology** will be used to route transactions to different servers for failover purposes
- **Linux servers,** most based on Red Hat's software, will run settlement and security applications and an external Web site

HP Sets the Stage for Alpha's Last Hurrah

Company will introduce new line of high-end servers along with plan to migrate to Itanium

BY JAIKUMAR VIJAYAN

Hewlett-Packard Co. is gearing up for the Jan. 21 launch of a long-awaited line of AlphaServers that promises to deliver substantial price/performance gains over existing technology.

MIGRATION STRATEGIES

But HP's previously announced plans to eventually standardize all of its servers on Intel Itanium processors may temper some of the enthusiasm the announcement would otherwise have generated, analysts said.

HP gained the Alpha technology through its purchase of Compaq Computer Corp. last year. AlphaServers run the OpenVMS and Tru64 Unix operating systems and were scheduled to be phased out of production even before HP's merger with Compaq. The company's AlphaServer business is deep in the red and is expected to lose about $200 million this fiscal year alone.

HP's Marvel family of AlphaServers is based on the company's recently released EV7 processors, with models ranging from a two-CPU departmental server to a 64-processor enterprise server. HP last week confirmed the planned Marvel announcement but declined to provide details on the systems or migration strategy in advance. However, much of that information has been freely available to the Alpha faithful, most recently from HP, and from Compaq before that.

Apart from the faster EV7 processors, the new Marvel departmental and enterprise servers will feature a technology called switchless mesh ar-

AlphaServer, page 16

'Trustworthy' Plan Plods Uphill

Microsoft continues struggle to balance security, functionality

BY CAROL SLIWA

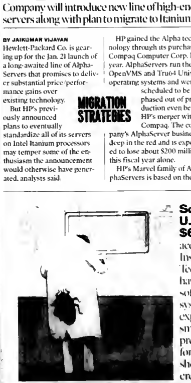
Wednesday will mark the one-year anniversary of the day that Bill Gates decreed, via a companywide memo, that "Trustworthy Computing" would be the highest priority for all the work Microsoft Corp. employees do.

Plenty of hurdles still lie ahead for Microsoft as it tries to strike the proper balance between ensuring the security of its software and pushing out the sort of innovative, increasingly scalable and more complex products it needs to keep its business thriving.

"There is always a trade-off between new functionality and security exposures, and a perfect example of that is BSD," said Andre Mendes, chief technology integration officer at the Public Broadcasting Service, referring to

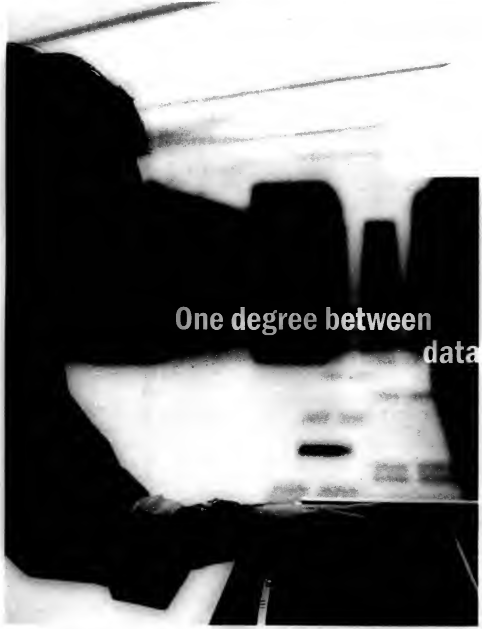
Trustworthy, page 51

SECURITY REPORT CARD Page 51



Software bugs cost U.S. companies nearly $60 billion per year, according to the National Institute of Standards and Technology. But they don't have to. Find and fix 1% of your software bugs, and 90% of your system problems go away, experts claim. Learn how smart CIOs are creating comprehensive strategies to test for and fix bugs in both off-the-shelf software and applications created in-house. **PAGE 39**

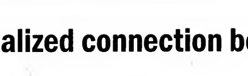
BITINGBACK

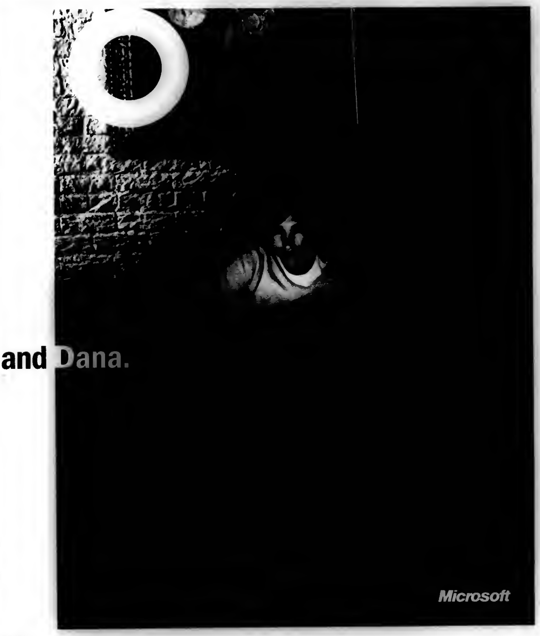


One degree between data

nalized connection between your company

The **Royal Canadian Mint** wanted to reach its diverse worldwide customers, expand sales of its products, and deliver a highly customized consumer experience, so they used the Web content management capabilities of Microsoft Content Management Server integrated with the e-commerce, personalization and backend data integration capabilities of Microsoft Commerce and BizTalk® Servers. Now the Mint can publish content in multiple languages, draw on customer information from its legacy database, and feed online orders through an existing ERP system, enabling the Royal Canadian Mint to offer customers a richer and more personalized experience.




and Dana.
Microsoft

storage platforms.
operating systems.
27 nightly backup schedules

CONTENTS

01.13.03

NEWS

TECHNOLOGY

MANAGEMENT

OPINIONS

DEPARTMENTS/RESOURCES

ONLINE

WWW.COMPUTERWORLD.COM

Fix Your Weakest Link

One of your company's greatest security risks may be sitting next to you. Try these seven suggestions to educate employees on protecting your organization against attack. @ QuickLink 35488

Linux Persuasion

How can you talk your CIO into trying Linux? Open Source Development Labs director Timothy D. "Wookie" Witham offers some tips. @ QuickLink 35485

Migrating Java Apps to .Net

KNOWLEDGE CENTER: Here's what you need to know about converting Java or Visual J++ applications to J# or C#. @ QuickLink 35547

Realistic Disaster Recovery

Paul Castellano of Allegheny Energy Inc. offers advice on gaining senior management buy-in on your next disaster recovery project. @ QuickLink 35264

More Mac

With Apple seeking a bigger presence in the enterprise, *Computerworld* is beefing up its Macintosh section and has launched a new biweekly newsletter to keep you up to date on Apple activities.
@ QuickLink a2620

ONLINE DEPARTMENTS

Breaking News
@ QuickLink a1510

Newsletter Subscriptions
@ QuickLink a1430

Knowledge Centers
@ QuickLink a2570

The Online Store
@ QuickLink a2420

AT DEADLINE

Judge Won't End Microsoft Suits

A federal court judge in Baltimore denied motions by Microsoft Corp. seeking to dismiss private antitrust lawsuits filed by Mountain View, Calif.-based Be Inc. and Santa Rosa, Calif.-based Burst.com Inc. Late Friday, Judge Frederick Motz was due to hear arguments on Microsoft's request to dismiss 13 of 16 claims made by Sun Microsystems Inc. in another antitrust suit.

Amdocs Finalizes IT Deal With SBC

Amdocs Ltd., a Chesterfield, Mo.-based software vendor, said it has finalized a seven-year IT outsourcing deal valued at "hundreds of millions of dollars" with SBC Communications Inc. in San Antonio. Amdocs will upgrade the systems used by SBC's telephone directory unit and then manage them. An unspecified number of IT workers will be shifted from SBC to Amdocs.

Oracle Makes Cuts In Sales Force

Oracle Corp. said it has nearly finished a planned reorganization of its North American sales force that includes layoffs of about 200 workers in the U.S. and Canada. The software vendor last month said the cuts were on the way in connection with a move to split its sales force into separate units for its database and applications.

Short Takes

MICROSOFT said a faulty router upgrade by AT&T CORP. last Thursday temporarily cut off access to several of the software vendor's Web sites and messaging services for about 40% of Internet users. . . . ART TECHNOLOGY GROUP INC., a vendor of online marketing and sales software in Cambridge, Mass., said it laid off about 115 employees in a move that cut its workforce by 20%.

Deployments Raise Profile of Blade PCs

PC heavyweights keep an eye on new technology

BY LUCAS MEARIAN

SEVERAL COMPANIES that have been kicking the tires on so-called blade PCs are starting to deploy the rack-mounted desktop technology in their data centers, looking for benefits such as increased security and ease of management.

CLIENT SYSTEMS

For now, blade PCs are available only from start-up vendors like ClearCube Technology Inc. in Austin, Texas. But the devices, which put a desktop spin on the more prevalent blade server concept, are also starting to attract the attention of some leading PC vendors.

For example, a spokeswoman for Hewlett-Packard Co. last week said the company isn't ready to disclose any plans to offer blade PC technology. But HP may be willing to address the topic in a month or two, she added.

Don McCall, a product marketing manager at Dell Computer Corp., said the company is monitoring ClearCube's progress closely. For now, Dell doesn't see enough demand to offer blade client technology, McCall said. "We do want to watch it, however," he added.

ClearCube, which introduced its first products in 2000, shrinks PCs to blade-size devices that are installed in racks in data centers. End users connect to the blades through videotape-size control units that sit on desktops and include connections for monitors, keyboards and other peripheral devices.

BP Energy Co., a Houston-based gas, oil and energy trading firm, in November finished a rollout of 100 ClearCube blade clients at a new energy trading floor in Calgary, Alberta.

It cost BP Energy about $250,000 for the blade clients, including installation and software. But the project brought an immediate return on investment by doing away with the cost of maintaining individual desktop PCs and eliminating the need to buy trading-floor desks built to hold multiple systems, said Greg Miller, manager of infrastructure at the company.

"From an operational point of view, we've shrunk the envelope of potential problems," Miller said. PC maintenance work can now be done "in a bulk format where we can deliver it economically," he added, noting that technicians simply pull problematic blade devices out of the racks for service.

The Calgary trading floor is a prototype site for the rest of the company, Miller noted.

Blade Clients

Devices like ClearCube's can:

LET IT managers consolidate hardware in data centers, reducing office space requirements and simplifying PC maintenance.

IMPROVE security by limiting the potential for users to download virus-laden software.

But the blades can also:

FACE resistance from end users who don't want to give up their desktop PCs.

COST MORE upfront than desktop PCs because of the need to buy racks and prepare data centers for the devices.

Avivah Litan, an analyst at Gartner Inc. in Stamford, Conn., said that although blade client technology is cutting-edge, the push to consolidate desktop PCs into data centers is several years old. Putting PCs in a data center can help companies improve IT security by reducing unauthorized software downloads by end users, Litan said.

But Litan and other analysts said blade PCs could face resistance from end users who don't want to lose control over their desktop systems.

That wasn't a problem for Guy Fuller, IT manager at Chicago-based Northwestern Memorial Physicians Group, which deployed 200 ClearCube devices at a clinic two months ago. Fuller said the doctors embraced the blade client architecture because they felt PCs made too much noise in examination rooms.

The upfront cost of ClearCube's technology was about 30% higher than the price of traditional desktop PCs because Northwestern had to buy racks and vent its computer room to reduce the heat generated by the blade devices, Fuller said. But he added that he likes the technology so much that he plans to deploy it at Northwestern's 11 other clinics by year's end. ▮

IBM Plans Software to Link Data From Multiple Sources

BY MARC L. SONGINI

IBM late this year plans to deliver DB2-based integration software that will let IT managers link data throughout their systems without needing to collapse the information into a single data warehouse.

While sketchy on the details, IBM last week said the integration technology will also give end users real-time access to data beyond DB2 and rival databases. Using native XML capabilities in DB2, users will be able to open up data from conventional sources, such as applications, as well as information stored in documents or e-mail messages, said Nelson Mattos, director of information integration at IBM.

He added that the new software will further IBM's federated approach to integration, which is designed to provide access to data without requiring users to move information from its source and reformat it to be DB2-friendly.

The company has already used the federated approach in products such as DiscoveryLink, which lets users in the life sciences industry access multiple databases, applications and search engines with a single query.

DATA-DRIVEN

Visit our Data Management Knowledge Center for more stories and resources:

QuickLink k1800
www.computerworld.com

IBM is the only large vendor that's pushing ahead extensively with this kind of virtual-database concept, said Philip Russom, an analyst at Giga Information Group Inc. One of the enablers for its approach is the fact that DB2 has the ability to index data stored in other repositories, he noted.

IBM has yet to disclose the middleware platforms that will be supported by the new data integration software. But it likely will use its own WebSphere tools, Russom said.

The concept of federated databases has been around since the 1990s, but companies are only now starting to view it as desirable, he said. For one thing, Russom explained, extracting large amounts of heterogeneous data and formatting it for use in a database requires extensive network resources.

In theory, IBM's upcoming technology will let users avoid the costs generated by such resource usage. Mattos said the new software will be released for beta testing by June and should ship by year's end. ▮

Report Questions ROI of i2's Software

Vendor acknowledges complexity but says most users get returns

BY MARC L. SONGINI

After spending years of effort and millions of dollars, some marquee users of i2 Technologies Inc.'s software say they're not getting their money's worth oo their investments, according to a report due to be released this week.

Nucleus Research Inc. said 12 of the 22 companies it surveyed indicated that they had not yet achieved a positive return on investment after using i2's supply chain management applications for an average of 2.2 years. All of the users were touted by i2 oo its Web site, noted Nucleus, a Wellesley, Mass.-based research firm.

Dallas-based i2 acknowledged that its software is complex but defended its ROI record with users. And four i2 customers who were interviewed by *Computerworld* about the findings said they're getting the desired results.

It's 'Rocket Science'

"I'm a little bit of the opinion that some people who fail at it underestimate the difficulty of what they are getting into," said John Mallon, director of supply chain management at On Semiconductor Corp. in Phoenix. "Contrary to popular opinion, it's rocket science."

On Semiconductor has used i2's software for three years. Mallon said implementing advanced planning applications such as the ones sold by i2 can be even more complicated than installing an enterprise resource planning system.

But be added that the chip maker has saved $20 millioo through improvements in productivity and inventory management that were made possible by i2's products.

On the other hand, a user at a Fortune 500 company who spoke on condition of anonymity said the Nucleus report reflects his experience with i2's technology. It took two attempts to successfully install i2's transportation management software, the user said. His company wrote off millions of dollars after the first try and has yet to fully recoup that money, be added.

"It was the most difficult rollout we've ever done," said the user. He added that i2's sales force "had more vision than the ability to deliver on the vision."

The major problem facing i2 users, according to Nucleus, is the length of time required to deploy the applications. Nearly 70% of the rollouts by the surveyed users took longer than planned, said Rebecca Wettemann, an analyst at Nucleus, which issued a similar report about users of Siebel Systems Inc.'s customer relationship management software in September [QuickLink 33196].

Two other analysts said the Nucleus survey is consistent with what they have heard anecdotally from i2 users.

"I2's solutions are complex, as are the problems that they endeavor to solve," said Karen Peterson, an analyst at Gartner Inc. And until a year ago, the company's modules differed from one another too much to be configured and deployed in a standard way, she said.

"You don't typically take the software and drop it in place and have it run," said Janet Eden-Harris, i2's chief marketing officer. She said Nucleus' findings are difficult to refute because there are many ways to calculate ROI or even the average cost of an implementation. But i2 does provide ROI metrics to customers as part of its rollout methodology, and most users get a return, Eden-Harris said.

She also noted that i2 has changed its sales methods from the "zealous years" when it was growing rapidly and that it now focuses more on ensuring long-term customer satisfaction. I2, which has lost money in four straight quarters, is also designing its upcoming i2 Six set of applications to be easier to install and use than existing versions, she said. ◆

MONEY MATTERS

For more stories and information resources on IT investment issues, head to our ROI Knowledge Center

QuickLink k2340

Project Statistics

The survey of 22 of i2's reference customers reveals the following:

- 12 of the users said they had not gotten an ROI after an average of 2.2 years with the supply chain software.
- The average implementation cost was $7.2 million, with hardware accounting for more than $400,000.
- The software required 74 hours of training for end users, on average.
- 14 of the users saw reductions in inventory costs, but only four said the savings offset their installation costs.

[illegible]

Vendors Push SSL-Based Remote Access Devices

BY MATT HAMBLEN

Remote access appliances that support the Secure Sockets Layer (SSL) protocol are gaining the attentioo of various networking vendors, with the latest product announcement expected to be made today by Seattle-based Aventail Corp.

Aveotail will announce the EX-1500, a clientless, rack-mountable SSL virtual private oetwork (VPN) device designed to provide remote end users with secure Web browser access to data in Windows files and client/server applications.

The EX-1500 isn't alone in the market. In November, Neoteris Inc. in Mountain View, Calif., added three appliances to its product line that also provide secure remote access via an SSL VPN. And Check Point Software Technologies Ltd. in Redwood City, Calif., announced software support for SSL VPN hardware products in July.

Other vendors, such as Netilla Networks Inc. in Somerset, N.J., and NetSilica Inc. in Piscataway, N.J., have also entered the market for SSL VPN technology, said John Pescatore, an analyst at Gartner Inc. in Stamford, Conn. The SSL-based products are easier to use and less expensive than VPN tools that support the IPsec protocol, Pescatore said.

Simplified Installation

IPsec requires the loading of client software that can conflict with applications and network protocols, but there's no such client software required for SSL, according to Pescatore and VPN users. That simplifies the installation process and can reduce the number of connection problems, thereby lowering IT support costs, they said.

Ron Sha, CIO at Borland Software Corp. in Scotts Valley, Calif., noted that the software vendor can connect new employees around the world to its corporate applications in "less than a minute" using Neoteris' technology. The workers need only a user name and password, Sha said.

Dade Behring Inc. in Deerfield, Ill., has been beta-testing the EX-1500 for a month and plans to roll out the Aventail device for 900 field sales and service workers in the U.S., said Craig Ross, director of global communication services at the maker of laboratory diagnostic products.

The technology will give users remote access to Web-enabled applications, plus messaging and collaboration tools, through their browsers, Ross said. Dade Behring may eventually use the EX-1500 to support all of its 6,000 employees worldwide, be added.

Because Dade Behring has remote workers who access data via Digital Sobscriber Line and satellite connections, the company often experiences IPsec connection delays, Ross said. The EX-1500 offers "a nice alternative" to solve that problem, be added.

For the past three years, Aventail has provided managed SSL VPN services to Fast-Tax, a Dallas-based vendor of tax preparation software that plans to begin beta-testing the EX-1500. Because no client software is required with the appliance, the cost of supporting connections to 500 financial services firms that use Fast-Tax's software should be reduced, said Jim Sergison, director of product marketing at the subsidiary of The Thomson Corp. ◆

PRODUCT DETAILS

Aventail's EX-1500

- **Pricing starts at $20,000** for the device, which features a rack-mounted design and supports clientless remote access.
- **The appliance uses SSL to connect** Web browsers to Microsoft Common Internet File System files, Windows Terminal Services and client/server software.

BRIEFS

Southwest Gives Net Nod to Sprint

Sprint Corp. said it has won a three-year deal to provide voice and high-speed data networking services to Southwest Airlines Co. A Sprint spokesman said Dallas-based Southwest chose Sprint to deliver services similar to those that had been provided by WorldCom Inc. He described the contract as a multimillion-dollar deal.

IBM Signs Chip Deal With AMD . . .

IBM and Advanced Micro Devices Inc. said they plan to jointly develop chip manufacturing process technologies aimed at producing faster and less power-hungry microprocessors. The first devices resulting from the deal will be produced using a 65-nanometer manufacturing process and are expected to be ready for release in 2005, according to IBM and Sunnyvale, Calif.-based AMD.

. . . And Switch Pact With Cisco

IBM also announced that its storage division plans to resell Cisco Systems Inc.'s new MDS 9000 line of switches for storage-area networks. IBM said it plans to begin offering the switches along with its disk and tape products by the end of this quarter. The deal is the first signed by Cisco for the devices, but EMC Corp. said it's currently testing the switches.

Short Takes

MICROSOFT CORP. released a second beta-test version of its Exchange Server 2003 messaging software, which is code-named Titanium and due for shipment by the end of June. . . . STORAGENETWORKS INC., a storage management software vendor in Waltham, Mass., replaced its CEO and laid off about half of its 220 workers.

MARK HALL • ON THE MARK

Database Giants Scoff at Open-Source Invader…

… MySQL AB, not unlike how operating system behemoths once laughed off the Linux phenomenon. But Marten Mickos, CEO of the Uppsala, Sweden-based company, thinks 2003 may be the year the popular open-source database, **MySQL, sneaks into the enterprise**. Currently, Version 3.2 is the most popular in the market, but MySQL 4.0 ships in about a month, and the alpha release of 4.1, which includes nested SQL queries among other improvements, hits in two weeks. And, Mickos claims, Version 5's alpha program for later this year will add enterprise-class features such as stored procedures and triggers.

This is old hat to users of DB2, Oracle, SQL Server and Sybase. So much so that when one of the major vendors' PR reps was asked about enterprise-level competition from MySQL, **the amused response was a mocking, "Oh, pleeze."** And Charlie Garry, an analyst at Meta Group, refers to MySQL as a "bare-bones database," ooting that the Big Four vendors are moving way beyond MySQL's capabilities with upcoming features that, for example, tie data warehouse functions with OLTP operations. Still, Garry argues that in the coming years, MySQL might very well "follow the same path as Microsoft" witb its SQL Server breaking slowly into companies as a departmental database server. He also points out that MySQL's free GPL license is "seeding the market" for future growth. But for those wbo want commercial licenses now, you can pick up one for $395 per server with no per-user charges, many thousands less than you'd pay for Big Four software. And if you download it free from the Internet, you don't even have to say please. ■ Competition in **the application storage management arena** may get less polite with Mountain View, Calif.-based Veritas Software's planned acquisition of Precise Software Solutions in Westwood, Mass. Houston's BMC Software has long been a partner of Veritas, and Dan Hoffman, BMC's director of enterprise storage management, refuses to say that the partnership will change, despite more direct competition from Precise's product line. But Hoffman says he does see the deal as **an indicator of more consolidation in an overcrowded market**. "There are too many storage software companies that cannot distinguish themselves," he says. One way BMC bopes to stay ahead of the pack is by adding predictive workload-based modeling features to its application storage management software. No simple task, Hoffman claims. Don't expect to see it before late 2003. Also, don't expect to see other applications' storage needs added to BMC's Patrol Storage Manager. When asked whether Lotus Notes would be added to a list that includes Oracle, SQL Server, Exchange, Sybase, DB2 and Siebel, Hoffman says nope. "I've heard requests for NetWare more often than for Notes." **That puts it way down the list.** ■ Wbile Linux is on most companies' support lists, it isn't on Unisys Corp.'s for the foreseeable future. According to David Houseman, VP of advanced technology at the Blue Bell, Pa.-based server maker, the company's focus is on **giving Windows "mainframelike characteristics"** on its ES7000 32-way computers. To that end, Unisys will be releasing its Enterprise Application Environment (EAE) for Windows 2000 Data Center and .Net. EAE has been around for years in different guises on the company's proprietary mainframes. Developers use high-level business rules and let EAE generate Java or .Net source code. Expect to see a beta version late this year. ■ In February you'll be able to get your hands on **Visual Net 3.0 from Antarctica Systems Inc.** in Vancouver, British Columbia. CTO Tom Bray, who's also one of the originators of XML, calls the product a "visual browse engine." It applies a map metaphor for Web sites, letting users navigate through icons instead of text. The 3.0 release adds Flash support and targets the retail and business intelligence vertical markets with preconceived glyphs and icons **so you won't have to read all those confusing words.** ■

Spam got you down? Hackers will be working on solutions at a [illegible] at the MIT Media Lab on Jan. 17 (*www.spamconference.org*). Be there or be spammed.

[illegible] will ship its Spam Server 3300G on Feb. 1. It lets you manage up to 11 petabytes worth of Windows and Unix files as a single NAS system image within a SAN.

BMC Ships Consoles to Wrap Up Patrol Upgrade

BY MATT HAMBLEN

BMC Software Inc. last week completed the rollout of its Patrol Version 7 enterprise management software, and clothing retailer The Men's Wearhouse Inc. said it's ready to put BMC's new network management consoles into production after a three-month test.

Men's Wearhouse, which operates more than 600 stores nationwide, uses Patrol to manage a network of 200 servers at its Houston headquarters. The Windows- and Web-based management consoles now available for Patrol 7 will help the retailer become more proactive in managing network growth, said Katie Scully, manager of enterprise management services.

"It's the difference between fighting fires and being proactive," she said. "Before Patrol came along, we'd react to problems, sometimes something as simple as running out of disk space." Men's Wearhouse has used earlier versions of Patrol for the past three years. With Patrol 7, the retailer expects to need fewer people to run its network.

The new consoles provide network managers with the ability to assign rights and privileges to end users, and centrally control security and authentication, according to Houston-based BMC.

Scully said the Patrol upgrade also gives network managers a view of monitoring agents installed on switches, routers and other network nodes, making it easier to remotely install additional agents. "It actually reduces the time tbe network managers need to be here," she said.

The Web and Windows management consoles each sell for $3,500, said BMC, which also released software to manage the deployment of its products for Windows and Unix systems.

Rich Ptak, an analyst at Ptak & Associates in Amherst, N.H., said BMC's new consoles don't leapfrog the ones offered by rivals. But be called BMC's pricing competitive. ■

BRIEFS

Southwest Gives Net Nod to Sprint

Sprint Corp. said it has won a three-year deal to provide voice and high-speed data networking services to Southwest Airlines Co. A Sprint spokesman said Dallas-based Southwest chose Sprint to deliver services similar to those that had been provided by WorldCom Inc. He described the contract as a multimillion-dollar deal.

IBM Signs Chip Deal With AMD . . .

IBM and Advanced Micro Devices Inc. said they plan to jointly develop chip manufacturing process technologies aimed at producing faster and less power-hungry microprocessors. The first devices resulting from the deal will be produced using a 65-nanometer manufacturing process and are expected to be ready for release in 2005, according to IBM and Sunnyvale, Calif.-based AMD.

. . . And Switch Pact With Cisco

IBM also announced that its storage division plans to resell Cisco Systems Inc.'s new MDS 9000 line of switches for storage-area networks. IBM said it plans to begin offering the switches along with its disk and tape products by the end of this quarter. The deal is the first signed by Cisco for the devices, but EMC Corp. said it's currently testing the switches.

Short Takes

MICROSOFT CORP. released a second beta-test version of its Exchange Server 2003 messaging software, which is code-named Titanium and due for shipment by the end of June. . . . STORAGENETWORKS INC., a storage management software vendor in Waltham, Mass., replaced its CEO and laid off about half of its 220 workers.

MARK HALL ▪ ON THE MARK

Database Giants Scoff at Open-Source Invader . . .

. . . MySQL AB, not unlike how operating system behemoths once laughed off the Linux phenomenon. But Marten Mickos, CEO of the Uppsala, Sweden-based company, thinks 2003 may be the year the popular open-source database, **MySQL, sneaks into the enterprise.** Currently, Version 3.2 is the most popular in the market, but MySQL 4.0 ships in about a month, and the alpha release of 4.1, which includes nested SQL queries among other improvements, hits in two weeks. And, Mickos claims, Version 5's alpha program for later this year will add enterprise-class features such as stored procedures and triggers.

This is old hat to users of DB2, Oracle, SQL Server and Sybase. So much so that when one of the major vendors' PR reps was asked about enterprise-level competitioo from MySQL, **the amused response was a mocking, "Oh, pleeeze."** And Charlie Garry, an analyst at Meta Group, refers to MySQL as a "bare-bones database," noting that the Big Four vendors are moving way beyond MySQL's capabilities with upcoming features that, for example, tie data warebouse functions with OLTP operations. Still, Garry argues that in the coming years, MySQL might very well "follow the same path as Microsoft" with its SQL Server breaking slowly into companies as a departmeotal database server. He also points out that MySQL's free GPL license is "seeding the market" for future growth. But for those who want commercial licenses now, you can pick up one for $395 per server with no per-user charges, many thousands less than you'd pay for Big Four software. And if you download it free from the Internet, you don't even have to say please. ▪ Competition in **the application storage management arena** may get less polite with Mountain View, Calif.-based Veritas Software's planned acquisition of Precise Software Solutions in Westwood, Mass. Houstoo's BMC Software has long been a partner of Veritas, and Dan Hoffman, BMC's director of enterprise storage management, refuses to say that the partnership will change, despite more direct competition from Precise's product line. But Hoffman says he does see the deal as **an indicator of more consolidation in an overcrowded market.** "There are too many storage software companies that cannot distinguish themselves," he says. One way BMC hopes to stay ahead of the pack is by adding predictive workload-based modeling features to its application storage management software. No simple task, Hoffman claims. Don't expect to see it before late 2003. Also, don't expect to see other applications' storage needs added to BMC's Patrol Storage Manager. When asked whether Lotus Notes would be added to a list that includes Oracle, SQL Server, Exchange, Sybase, DB2 and Siebel, Hoffman says nope. "I've beard requests for NetWare more often than for Notes." **That puts it way down the list.** ▪ While Linux is on most companies' support lists, it isn't on Unisys Corp.'s for the foreseeable future. According to David Houseman, VP of advanced technology at the Blue Bell, Pa.-based server maker, the company's focus is on **giving Windows "mainframelike characteristics"** on its ES7000 32-way computers. To that end, Unisys will be releasing its Enterprise Application Environment (EAE) for Windows 2000 Data Center and .Net. EAE has been around for years in different guises on the company's proprietary mainframes. Developers use high-level business rules and let EAE generate Java or .Net source code. Expect to see a beta version late this year. ▪ In February you'll be able to get your hands on **Visual Net 3.0 from Antarctica Systems Inc.** in Vancouver, British Columbia. CTO Tom Bray, who's also one of the originators of XML, calls the product a "visual browse engine." It applies a map metaphor for Web sites, letting users navigate through icons instead of text. The 3.0 release adds Flash support and targets the retail and business intelligence vertical markets with preconceived glyphs and icons **so you won't have to read all those confusing words.** ▪

Span [illegible] Hacke [illegible] working [illegible] a [illegible] the MIT Media [illegible] on Jan. 17 [illegible]

[illegible] Server 3300G [illegible] Windows and Unix files [illegible] NAS system image without a SAN

BMC Ships Consoles to Wrap Up Patrol Upgrade

BY MATT HAMBLEN

BMC Software Inc. last week completed the rollout of its Patrol Version 7 enterprise management software, and clothing retailer The Men's Wearhouse Inc. said it's ready to put BMC's new network management consoles into production after a three-month test.

Men's Wearhouse, which operates more than 600 stores nationwide, uses Patrol to manage a network of 200 servers at its Houston headquarters. The Windows- and Web-based management consoles now available for Patrol 7 will help the retailer become more proactive in managing network growth, said Katie Scully, manager of enterprise management services.

"It's the difference between fighting fires and being proactive," she said. "Before Patrol came along, we'd react to problems, sometimes something as simple as running out of disk space." Men's Wearhouse has used earlier versions of Patrol for the past three years. With Patrol 7, the retailer expects to need fewer people to run its network.

The new consoles provide network managers with the ability to assign rights and privileges to end users, and centrally control security and authentication, according to Houston-based BMC.

Scully said the Patrol upgrade also gives network managers a view of monitoring agents installed on switches, routers and other network nodes, making it easier to remotely install additional agents. "It actually reduces the time the network managers need to be here," she said.

The Web and Windows management consoles each sell for $3,500, said BMC, which also released software to manage the deployment of its products for Windows and Unix systems.

Rich Ptak, an analyst at Ptak & Associates in Amherst, N.H., said BMC's new consoles don't leapfrog the ones offered by rivals. But he called BMC's pricing competitive. ▪

Tax Break Could Ease IT Purchasing Pain

High-tech groups hope stimulus plan will include boost to depreciation bonus

BY PATRICK THIBODEAU
WASHINGTON

CORPORATE USERS may get a tax incentive to avoid delaying hardware and software purchases if congressional backers prevail in their efforts to increase the depreciation bonus.

The bonus could influence the timing of business IT purchases, depending on when the move — if approved — takes effect. The current bonus, which was set at 30% last year by Congress, is on top of normal depreciation and has helped lower companies' year-end tax bills by increasing their write-offs.

High-tech industry groups, which say 30% isn't enough to stimulate spending, were disappointed by President Bush's rejection of an expanded depreciation bonus in the economic stimulus plan he announced last week. But in another stimulus plan also released last week, House Democrats proposed a 50% bonus for this year, a rate that the Information Technology Association of America in Arlington, Va., wanted in the president's proposal. There are signs of Republican backing for that proposal as well.

Case-by-Case Basis

Whether a bonus will help a particular company depends on its business needs, say analysts and IT managers.

For instance, retailer Lowe's Cos.' ongoing expansion, which included the opening of 120 superstores in 2002 with plans for 130 more this year, is driving technology purchases, said Steve Stone, vice president of IT strategy at the Wilkesboro, N.C., company.

But a depreciation increase could affect the timing of a purchase, if the planned date is close to when the tax break goes into effect, said Stone.

That's the case as well for Richard Jones, managing director and CIO at Countrywide Home Loans Inc. in Calabasas, Calif., who said he doubts that the depreciation bonus would affect purchasing in any way other than timing. Business expansion is the overriding factor in IT spending, he said.

While the depreciation bonus applies to any equipment purchase, the IT equipment sector is especially in need of a boost. Hardware, software and services spending declined 5.2% last year after a 5.4% drop in 2001, according to IDC.

And IT spending forecasts for 2003 are mixed. IDC expects a 4.4% increase in U.S. IT spending this year to $383.1 billion. In reports last week, Aberdeen Group Inc. in Boston said it expects U.S. IT spending to increase 3.6%, but The Goldman Sachs Group Inc. in New York predicted a 1% drop, based on a survey of 100 IT managers at Fortune 1,000 companies.

Analysts and trade groups have yet to determine whether the 30% depreciation bonus has helped IT spending.

"It's too soon for any of those forecasting numbers to show that," said Caroline Graves Hurley, a policy expert at AEA, a high-tech trade association in Washington. "But I do think there has been a sluggish response."

How It Works

Congress last year approved a 30% depreciation bonus that remains in affect until Sept. 11, 2004. There is a push to increase it to 50% or more.

EXAMPLE: Your firm just bought a $100,000 system.

- Normal depreciation is 20% over five years. The 30% bonus increases that depreciation to 50% in the first year
- At a 40% tax rate, the tax savings on the 20% depreciation is $8,000. At 50%, it's $20,000

IDC economist Kevin White said the forecast increase in IT spending has more to do with economic improvements and corporate profits than with a tax break. "The biggest driver is the continuing improvement of the economy," he said.

Companies may not have to hold back on purchases. The 30% bonus was retroactive to September 2001, and Peter Rugg, a corporate finance expert at Tatum CFO Partners LLP in New York, said that historically, lawmakers have made these kinds of incentives retroactive. ◆

State CIOs Face Budget Crises

Layoffs, IT project cuts, pressure on vendors expected

BY PATRICK THIBODEAU
WASHINGTON

The worst fiscal crisis to hit state governments since World War II is forcing state IT managers to lay off employees, squeeze vendors for better deals and limit IT projects to those that deliver an immediate return on investment. Nothing less stands a chance.

"It's ugly. It's really, really ugly is the best way I can describe it," said Connecticut CIO Rock Regan, referring to the state's budget shortfall of more than $600 million. He has laid off 115 IT workers — 11% of his staff — and it could get worse.

Collectively, the states may be facing a budget gap this year of as much as $20 billion, and potentially many times that amount for the next fiscal year, according to some estimates. The National Governors Association says there hasn't been a budget crisis like it in 50 years.

Legislative sessions are starting this month, governors are releasing budgets, and lawmakers are getting ready to cut. Meanwhile, state CIOs are doing what they can to prepare for cutbacks by pushing consolidation and standardization of systems, examining the use of open-source alternatives and exploring new ways to finance projects.

Texas CIO Carolyn Purcell said that if vendors "are sure that their product will save money," then they should be prepared to accept payment out of the amount of money saved.

The position of state CIO is relatively new in most states, and turnover is high. A major problem they face is fighting bureaucratic resistance to systems consolidation. But that's changing, some said.

"There's a reason why Southwest only flies 737s and still makes money," said Terry Savage, Nevada's CIO, referring to Southwest Airlines Co.'s reliance on a single Boeing model. Agencies are now less eager to defend the support of multiple systems that are incompatible. The economic downturn "is changing the discussion," Savage said.

In New York, CIO James Dillon intends to standardize the state's e-mail system. State workers now use three major systems, as well as a host of mainframe proprietary systems. "We will decide on one," said Dillon, who has about 150,000 end users to deal with.

State agencies "are more accepting of change, provided we can show that a business case will result in cost savings," said Dillon.

But the budget crisis also means that projects with a return on investment beyond one or two years, such as many e-government or Web services projects, are unlikely to get funding.

"We can't get to the point where anybody wants to talk about spending money to save money down the road," said Regan.

But efforts by state CIOs to consolidate and standardize, for instance, could be hurt if funding for centralized IT agencies is cut deeply and power shifts back to state agencies, said former Georgia CIO Larry Singer. CIOs could find themselves "taking a step back," said Singer, who moved last month to the not-for-profit public-sector consulting firm Public Interest Breakthroughs Inc. in Vienna, Va.

Although the budget problems are creating some opportunities to gain efficiency through consolidation and standardization, there's no getting around the pain.

North Dakota CIO Curtis Wolfe has been gradually letting his consultants go and doing what he can to save his IT workers from layoffs.

State agencies have been told that budgets will be 95% of last year's, and that's just for starters. "We've just got to reduce our cost of operation where we can," said Wolfe. ◆

Singlestep Readies Network Management Integration Tool

Start-up seeks to broaden capabilities of 'manager of managers' technology

BY MATT HAMBLEN

SINGLESTEP Technologies Corp. this week plans to ship a tool for integrating different network management systems, a move analysts described as another effort to find the Holy Grail of network control products known as a "manager of managers" (MOM).

Two Seattle-based companies, Alaska Air Group Inc. and national broadband services provider Speakeasy Inc., last week said they're evaluating Singlestep's Unity software to see if it can live up to the promise of combining information pumped out by various network monitoring and management systems.

"Getting to network information as quickly as possible is important, so if you have a tool to look at all the network management sources, that would be a terrific benefit," said Jeffrey Hervin, network operations manager at Alaska Air Group's Alaska Airlines unit. He declined to discuss the evaluation further.

Danny Pickford, director of engineering at Speakeasy, said Unity looks to be "useful, because it can query data from disparate network sources and put it together, as well as filter out unimportant things."

The initial release from Seattle-based Singlestep will integrate data from up to seven network management sources, including Hewlett-Packard Co.'s OpenView and Cisco Systems Inc.'s Works. But Unity eventually will be able to perform logical analyses of network problems and then send reports to network architects, Pickford said. "I'm really excited about that potential," he added.

Speakeasy operates 11 points of presence in North America for Digital Subscriber Line services and has a network with 400 switches, routers and other nodes in Seattle. Pickford said he hopes to use Unity to improve load balancing across Speakeasy's network.

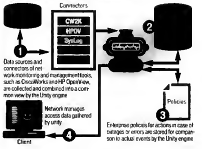
Michael Disabato, an analyst at The Burton Group in Salt Lake City, said Unity fits under the heading of MOM technology, which first arose more than 10 years ago. Other vendors, such as System Management Arts Inc. in White Plains, N.Y., and Aprisma Management Technologies Inc. in Portsmouth, N.H., also provide low-cost tools with MOM-like capabilities. But most of the products can read data only from devices based on the Simple Network Management Protocol (SNMP), Disabato said.

In contrast, Unity can read non-SNMP data and even Web page reports that are pushed to the software. That could include information from circuits that are monitoring burglar and fire alarms, power supplies and temperature controls, according to Disabato.

In addition, Unity is priced far below high-end MOM products from IBM's Tivoli unit and Computer Associates International Inc., which can cost a large company millions to implement, Disabato said.

Unity prices start at $75,000, but a typical installation that includes managed services provided by Singlestep and can monitor five to seven network management systems will cost about $250,000, said Singlestep CEO Chris Noble.

Singlestep's Unity Server



Data sources and connectors of network monitoring and management tools, such as CiscoWorks and HP OpenView, are collected and combined into a common view by the Unity engine

Network manages access data gathered by unity

Enterprise policies for actions in case of outages or errors are stored for comparison to actual events by the Unity engine

---

Feds Drop Wall Street IT Disaster Recovery Proposal

Implementation labeled unfeasible

BY LUCAS MEARIAN

A U.S. senator this month said federal regulators have abandoned a proposal that, if made law, could have required Wall Street firms to move their disaster recovery data centers hundreds of miles away from their primary IT facilities.

That idea was included in an interagency white paper, released in August, on strengthening the resilience of the U.S. financial system. However, financial services firms criticized it as unnecessary and technically unfeasible. For example, Fibre Channel, the most common network protocol used between data centers, has a distance limit of about 100 kilometers, or 62 miles.

Sen. Charles Schumer (D-N.Y.) based his analysis of the regulators' plans on a Dec. 23 letter that was sent to him by the heads of the Federal Reserve System, the Office of the Comptroller of the Currency and the Securities and Exchange Commission.

Schumer is a member of the Senate Banking Committee, which has oversight of federal financial agencies. He said the letter stated, in part, that the draft white paper had been inaccurately described in public accounts and didn't set minimum distance requirements or recommend "as a sound practice that firms move out of center-city locations."

However, the white paper did suggest the use of out-of-region IT backup facilities. It also posed a series of IT-related questions, including one that asked whether a minimum distance between primary and backup data centers should be required "for core clearing and settlement organizations and firms that play significant roles in critical markets." The paper listed a distance of 200 to 300 miles as an example.

In one of dozens of responses to the white paper, PNC Financial Services Group Inc. in New York said in an October letter to the Federal Reserve's board of governors that disaster recovery requirements must be technologically attainable.

"Under most disaster scenarios, technology backup recovery sites do not need to be more than a few miles apart to adequately recover the primary site," PNC said.

The Banking Information Technology Secretariat (BITS), a Washington-based organization made up of the 100 largest financial services firms in the U.S., also filed a comment letter in October.

"The regulators are trying to do the right thing, but let's do it in a way where we don't impose excessively high costs or implement something that is technologically not possible to do," John Carlson, senior director of BITS, said this month.

Many New York-based financial services firms already have disaster recovery sites in New Jersey or in boroughs of the city outside of Manhattan. But Larry Tabb, an analyst at TowerGroup in Needham, Mass., said the government's obvious concern is that in the event of a nuclear attack on New York, backup facilities would likely be destroyed.

Data Center Protection Practices

The federal white paper on strengthening the disaster recovery practices of the U.S. financial system asked the following IT-related questions:

SHOULD some minimum distance between primary and backup data centers be specified?

SHOULD backup sites not be dependent on the same labor pools or infrastructure components as main data centers?

ARE there alternative arrangements that would provide sufficient resilience for facilities within a single region?

SHOULD core transaction clearing and settlement firms consider adopting common communication protocols?

Singlestep Readies Network Management Integration Tool

Start-up seeks to broaden capabilities of 'manager of managers' technology

BY MATT HAMBLEN

SINGLESTEP Technologies Corp. this week plans to ship a tool for integrating different network management systems, a move analysts described as another effort to find the Holy Grail of network control products known as a "manager of managers" (MOM).

Two Seattle-based companies, Alaska Air Group Inc. and national broadband services provider Speakeasy Inc., last week said they're evaluating Singlestep's Unity software to see if it can live up to the promise of combining information pumped out by various network monitoring and management systems.

"Getting to network information as quickly as possible is important, so if you have a tool to look at all the network management sources, that would be a terrific benefit," said Jeffrey Hervin, network operations manager at Alaska Air Group's Alaska Airlines unit. He declined to discuss the evaluation further.

Danny Pickford, director of engineering at Speakeasy, said Unity looks to be "useful, because it can query data from disparate network sources and put it together, as well as filter out unimportant things."

The initial release from Seattle-based Singlestep will integrate data from up to seven network management sources, including Hewlett-Packard Co.'s OpenView and Cisco Systems Inc.'s Works. But Unity eventually will be able to perform logical analyses of network problems and then send reports to network architects, Pickford said. "I'm really excited about that potential," he added.

Speakeasy operates 11 points of presence in North America for Digital Subscriber Line services and has a network with 400 switches, routers and other nodes in Seattle. Pickford said he hopes to use Unity to improve load balancing across Speakeasy's network.

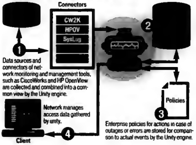
Michael Disabato, an analyst at The Burton Group in Salt Lake City, said Unity fits under the heading of MOM technology, which first arose more than 10 years ago. Other vendors, such as System Management Arts Inc. in White Plains, N.Y., and Aprisma Management Technologies Inc. in Portsmouth, N.H., also provide low-cost tools with MOM-like capabilities. But most of the products can read data only from devices based on the Simple Network Management Protocol (SNMP), Disabato said.

In contrast, Unity can read non-SNMP data and even Web page reports that are pushed to the software. That could include information from circuits that are monitoring burglar and fire alarms, power supplies and temperature controls, according to Disabato.

In addition, Unity is priced far below high-end MOM products from IBM's Tivoli unit and Computer Associates International Inc., which can cost a large company millions to implement, Disabato said.

Unity prices start at $75,000, but a typical installation that includes managed services provided by Singlestep and can monitor five to seven network management systems will cost about $250,000, said Singlestep CEO Chris Noble. ◗

Singlestep's Unity Server



1. Data sources and connectors of network monitoring and management tools, such as CiscoWorks and HP OpenView are collected and combined into a common view by the Unity engine.

3. Enterprise policies for actions in case of outages or errors are stored for comparison to actual events by the Unity engine.

4. Network manages access data gathered by unity.

Feds Drop Wall Street IT Disaster Recovery Proposal

Implementation labeled unfeasible

BY LUCAS MEARIAN

A U.S. senator this month said federal regulators have abandoned a proposal that, if made law, could have required Wall Street firms to move their disaster recovery data centers hundreds of miles away from their primary IT facilities.

That idea was included in an interagency white paper, released in August, on strengthening the resilience of the U.S. financial system. However, financial services firms criticized it as unnecessary and technically unfeasible. For example, Fibre Channel, the most common network protocol used between data centers, has a distance limit of about 100 kilometers, or 62 miles.

Sen. Charles Schumer (D-N.Y.) based his analysis of the regulators' plans on a Dec. 23 letter that was sent to him by the heads of the Federal Reserve System, the Office of the Comptroller of the Currency and the Securities and Exchange Commission.

Schumer is a member of the Senate Banking Committee, which has oversight of federal financial agencies. He said the letter stated, in part, that the draft white paper had been inaccurately described in public accounts and didn't set minimum distance requirements or recommend "as a sound practice that firms move out of center-city locations."

However, the white paper did suggest the use of out-of-region IT backup facilities. It also posed a series of IT-related questions, including one that asked whether a minimum distance between primary and backup data centers should be required "for core clearing and settlement organizations and firms that play significant roles in critical markets." The paper listed a distance of 200 to 300 miles as an example.

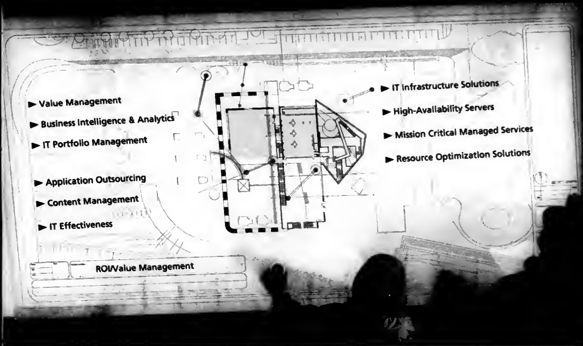
In one of dozens of responses to the white paper, PNC Financial Services Group Inc. in New York said in an October letter to the Federal Reserve's board of governors that disaster recovery requirements must be technologically attainable.

"Under most disaster scenarios, technology backup recovery sites do not need to be more than a few miles apart to adequately recover the primary site," PNC said.

The Banking Information Technology Secretariat (BITS), a Washington-based organization made up of the 100 largest financial services firms in the U.S., also filed a comment letter in October.

"The regulators are trying to do the right thing, but let's do it in a way where we don't impose excessively high costs or implement something that is technologically not possible to do," John Carlson, senior director of BITS, said this month.

Many New York-based financial services firms already have disaster recovery sites in New Jersey or in boroughs of the city outside of Manhattan. But Larry Tabb, an analyst at TowerGroup in Needham, Mass., said the government's obvious concern is that in the event of a nuclear attack on New York, backup facilities would likely be destroyed. ◗


Value Management
Business Intelligence & Analytics
IT Portfolio Management
Application Outsourcing
Content Management
IT Effectiveness
ROI/Value Management
IT Infrastructure Solutions
High-Availability Servers
Mission Critical Managed Services
Resource Optimization Solutions

BRIEFS

Storage Vendors See Stronger Q4

EMC Corp. said its fourth-quarter financial results should top expectations, with revenue totaling at least $1.47 billion. That's up from a projection of about $1.26 billion that EMC made during the quarter. However, EMC said it still expects to report a loss because of a $160 million restructuring charge. Storage Technology Corp. in Louisville, Colo., and McData Corp. in Broomfield, Colo., also raised their fourth-quarter guidance.

IBM to Outsource Production Work

IBM announced that San Jose-based Sanmina-SCI Corp. will take over manufacturing of "a significant portion" of its low-end and midrange xSeries servers and IntelliStation workstations in a deal valued at $3.6 billion over three years. IBM also said it's outsourcing a refurbishing center for leased IT equipment to Milpitas, Calif.-based Solectron Corp.

SAP Reorganizes, Cuts Sales Force

SAP AG said it laid off about 130 workers at its U.S. subsidiary in Newtown Square, Pa., as part of a sales force reorganization. SAP America Inc.'s sales personnel will now work on a regional basis instead of focusing on vertical industries, the company said. About one-third of the jobs that were cut will be redefined and filled again, SAP said.

Short Takes

AT&T CORP. said it plans to lay off 3,500 of its 72,000 workers, with most of the cuts coming at its business services unit. . . . IBM said it's transferring Al Zollar, general manager of its Lotus Software Group, to a new job heading the unit that develops its iSeries servers.

IBM Offers On-Demand Service for High-End Use

Option will enable companies needing supercomputer power to lower costs

BY JAIKUMAR VIJAYAN

IBM LAST WEEK launched a capacity-on-demand option under which companies with high-performance computing requirements will be able to rent supercomputing power on an as-needed basis.

The service will provide companies in sectors such as energy and financial services with quick access to the computing resources they need without the high fixed costs usually associated with supercomputing, said Dave Jursik, an IBM vice president.

Under the program, users will be able to rent capacity from either IBM Power architecture-based supercomputers or Intel Corp.-based high-performance Linux clusters. IBM will charge customers based on the capacity used and duration of use.

The approach makes particular sense for companies that want access to extensive computing resources for short periods of time, Jursik said.

"It will allow them to eliminate large fixed costs and have a variable-cost infrastructure instead," he said.

PGS Geophysical, an Oslo-based company that provides imaging services for large oil companies, expects to save about $1.5 million annually on equipment-related costs under this approach, said Christopher Usher, the company's president of data processing.

PGS usually leases or buys outright the supercomputing capacity it needs from IBM. But the company recently signed up for the on-demand option and is using rented supercomputer capacity for an advanced seismic imaging project in the Gulf of Mexico.

Under the arrangement, PGS sends disks containing seismic data to IBM, IBM loads and processes the data on its supercomputers, and users at remote PGS locations can access the data via the Internet or dedicated lines.

"Capacity on demand is something that we have been talking about for some time as an alternative way to get computing capacity," Usher said. "The savings come from not having to pay for your computers when you are not using them."

The new supercomputing capacity-on-demand option is an example of the kind of service users can expect to see IBM deliver under the On-Demand initiative recently outlined by CEO Samuel J. Palmisano, Jursik said [QuickLink 34091].

Initially, much of the interest in this kind of service will come from a narrow set of users with very periodic but well-defined needs for computing power, said Mike Kahn, an analyst at The Clipper Group Inc. in Wellesley, Mass.

Though such pay-as-you-go arrangements have been available on a sporadic basis for years, IBM's announcement last week marks the first time such an option is being offered on commercial RISC and Intel servers, Kahn said. ▶

High Rent

To supply the processing power for supercomputing on demand:

IBM WILL BUILD a grid of Intel and IBM Power processors.

THE GRID WILL COMPRISE hundreds of 128-processor IBM eServer p655 systems, and a Linux cluster with IBM eServer x335 and x345 systems based on Intel Xeon processors.

SGI Offers Itanium 2-Based Linux Systems

Altix servers to complement Irix

BY TOM KRAZIT

Silicon Graphics Inc. last week announced systems that combine the Linux operating system with Intel Corp.'s Itanium 2 processor to create a nonproprietary server that can scale up to 64 processors.

The Altix 3300 and Altix 3700 run on a standard version of Linux that's compatible with Red Hat Inc.'s Linux Version 7.2. The Altix 3300 can be configured with a single node of four to 12 Itanium 2 processors, and the Altix 3700 can use 16 to 64 Itanium 2 processors in a node.

Each node contains a single Linux operating system image and up to 512GB of memory. The Altix 3000 machines will be ideal for clustering, because SGI's NUMAlink interconnect technology lets users connect nodes and share memory across processors, according to Jan Silverman, senior vice president of marketing at Mountain View, Calif.-based SGI.

SGI will support clusters of up to 512 processors this year and allow users to build clusters of more than 1,000 processors next year, said Andy Senselau, product manager for the Altix 3000 family.

The Itanium 2 processor offers Altix users the ability to run 64-bit applications at high levels, SGI said, pointing to several positive benchmarking results for the Altix system using tests from Standards Performance Evaluation Corp. in Warrenton, Va. But users of 32-bit applications won't be able to run those programs any faster than an ancient 356-MHz processor could, said Nathan Brookwood, a principal analyst at research company Insight 64 in Saratoga, Calif.

"Anything used on a day-to-day basis that requires significant computational ability will need 64-bit adaptations," he said. This means users have to recompile their older applications to realize the performance benefits of the Itanium 2.

The company's target market of researchers and creative professionals has been clamoring for a Linux operating environment that will let them break free of their dependence on proprietary platforms, Silverman said.

However, SGI also manufactures a line of proprietary systems, the Origin 3000 family, that comes with the company's Irix operating system. The new Altix machines let SGI tap into the rapidly growing Linux market while it continues to offer the advanced features of Irix to users who are willing to pay a premium, Silverman said.

"Irix has application capability that isn't present in Linux. People depend on the reliability and security features within Irix, and it's not easy to put those features into Linux," Silverman said.

Krazit is a reporter for the IDG News Service.

NEW PRODUCT

[illegible]

- Processor
  Starting price
- Processors
  Starting price

BRIEFS

Storage Vendors See Stronger Q4

EMC Corp. said its fourth-quarter financial results should top expectations, with revenue totaling at least $1.47 billion. That's up from a projection of about $1.26 billion that EMC made during the quarter. However, EMC said it still expects to report a loss because of a $160 million restructuring charge. Storage Technology Corp. in Louisville, Colo., and McData Corp. in Broomfield, Colo., also raised their fourth-quarter guidance.

IBM to Outsource Production Work

IBM announced that San Jose-based Sanmina-SCI Corp. will take over manufacturing of "a significant portion" of its low-end and midrange xSeries servers and IntelliStation workstations in a deal valued at $3.6 billion over three years. IBM also said it's outsourcing a refurbishing center for leased IT equipment to Milpitas, Calif.-based Solectron Corp.

SAP Reorganizes, Cuts Sales Force

SAP AG said it laid off about 130 workers at its U.S. subsidiary in Newtown Square, Pa., as part of a sales force reorganization. SAP America Inc.'s sales personnel will now work on a regional basis instead of focusing on vertical industries, the company said. About one-third of the jobs that were cut will be redefined and filled again, SAP said.

Short Takes

AT&T CORP. said it plans to lay off 3,500 of its 72,000 workers, with most of the cuts coming at its business services unit. . . . IBM said it's transferring Al Zollar, general manager of its Lotus Software Group, to a new job heading the unit that develops its iSeries servers.

IBM Offers On-Demand Service for High-End Use

Option will enable companies needing supercomputer power to lower costs

BY JAIKUMAR VIJAYAN

IBM LAST WEEK launched a capacity-on-demand option under which companies with high-performance computing requirements will be able to rent supercomputing power on an as-needed basis.

The service will provide companies in sectors such as energy and financial services with quick access to the computing resources they need without the high fixed costs usually associated with supercomputing, said Dave Jursik, an IBM vice president.

Under the program, users will be able to rent capacity from either IBM Power architecture-based supercomputers or Intel Corp.-based high-performance Linux clusters. IBM will charge customers based on the capacity used and duration of use.

The approach makes particular sense for companies that want access to extensive computing resources for short periods of time, Jursik said.

"It will allow them to eliminate large fixed costs and have a variable-cost infrastructure instead," he said.

PGS Geophysical, an Oslo-based company that provides imaging services for large oil companies, expects to save about $1.5 million annually on equipment-related costs under this approach, said Christopher Usher, the company's president of data processing.

PGS usually leases or buys outright the supercomputing capacity it needs from IBM. But the company recently signed up for the on-demand option and is using rented supercomputer capacity for an advanced seismic imaging project in the Gulf of Mexico.

High Rent

Under the arrangement, PGS sends disks containing seismic data to IBM, IBM loads and processes the data on its supercomputers, and users at remote PGS locations can access the data via the Internet or dedicated lines.

"Capacity on demand is something that we have been talking about for some time as an alternative way to get computing capacity," Usher said. "The savings come from not having to pay for your computers when you are not using them."

The new supercomputing capacity-on-demand option is an example of the kind of service users can expect to see IBM deliver under the On-Demand initiative recently outlined by CEO Samuel J. Palmisano, Jursik said [QuickLink 34091].

Initially, much of the interest in this kind of service will come from a narrow set of users with very periodic but well-defined needs for computing power, said Mike Kahn, an analyst at The Clipper Group Inc. in Wellesley, Mass.

Though such pay-as-you-go arrangements have been available on a sporadic basis for years, IBM's announcement last week marks the first time such an option is being offered on commercial RISC and Intel servers, Kahn said. ▮

SGI Offers Itanium 2-Based Linux Systems

Altix servers to complement Irix

BY TOM KRAZIT

Silicon Graphics Inc. last week announced systems that combine the Linux operating system with Intel Corp.'s Itanium 2 processor to create a nonproprietary server that can scale up to 64 processors.

The Altix 3300 and Altix 3700 run on a standard version of Linux that's compatible with Red Hat Inc.'s Linux Version 7.2. The Altix 3300 can be configured with a single node of four to 12 Itanium 2 processors, and the Altix 3700 can use 16 to 64 Itanium 2 processors in a node.

Each node contains a single Linux operating system image and up to 512GB of memory. The Altix 3000 machines will be ideal for clustering, because SGI's NUMAlink interconnect technology lets users connect nodes and share memory across processors, according to Jan Silverman, senior vice president of marketing at Mountain View, Calif.-based SGI.

SGI will support clusters of up to 512 processors this year and allow users to build clusters of more than 1,000 processors next year, said Andy Senselau, product manager for the Altix 3000 family.

The Itanium 2 processor offers Altix users the ability to run 64-bit applications at high levels, SGI said, pointing to several positive benchmarking results for the Altix system using tests from Standards Performance Evaluation Corp. in Warrenton, Va. But users of 32-bit applications won't be able to run those programs any faster than an ancient 356-MHz processor could, said Nathan Brookwood, a principal analyst at research company Insight 64 in Saratoga, Calif.

"Anything used on a day-to-day basis that requires significant computational ability will need 64-bit adaptations," he said. This means users have to recompile their older applications to realize the performance benefits of the Itanium 2.

NEW PRODUCT

The company's target market of researchers and creative professionals has been clamoring for a Linux operating environment that will let them break free of their dependence on proprietary platforms, Silverman said.

However, SGI also manufactures a line of proprietary systems, the Origin 3000 family, that comes with the company's Irix operating system. The new Altix machines let SGI tap into the rapidly growing Linux market while it continues to offer the advanced features of Irix to users who are willing to pay a premium, Silverman said.

"Irix has application capability that isn't present in Linux. People depend on the reliability and security features within Irix, and it's not easy to put those features into Linux," Silverman said.

Krazit is a reporter for the IDG News Service.

CUBE

Recognize any of these issues? Or, perhaps, all of them? We thought so. Many of these issues can be related to your legacy desktop software; fortunately, many of them can be addressed by features in Microsoft® Windows® XP Professional

Needs access to HR, not accounting
Wants to encrypt a memo
Needs

Continued from page 1

Energy Market

sees the six-state region's bulk power system and wholesale electricity market, this week plans to conduct its third external trial of the new system. The test, which is expected to be the final one, will involve an unspecified number of electricity generators and distributors and is aimed at gauging the technology's readiness.

The system is built around more than 400 servers, including eight of Hewlett-Packard Co.'s AlphaServers. It's being designed to let market participants buy and sell electricity at prices that are set one day before transactions take place and then in real time to reflect changes in the market. ISO New England officials said the company is developing the system with help from Alstom Corp., a Bellevue, Wash.-based software vendor.

The technology being implemented at ISO New England's facilities here is based on a system Alstom created for PJM Interconnection LLC, an independent system operator (ISO) in Norristown, Pa. But ISO New England has worked with Alstom and consultants such as Stamford, Conn.-based GRT Corp. to customize the system.

For example, the company added features that let market participants account for losses that can occur on transactions, plus capabilities to handle hydroelectric dispatches from sellers to buyers, said Gordon van Welie, ISO New England's president and CEO.

In addition to the AlphaServer hardware, which HP acquired through its purchase of Compaq Computer Corp., ISO New England's system uses Oracle databases and Linux servers. Work on the project started in May 2001.

The system includes so-called multisettlement capabilities, which let buyers and sellers agree on binding prices prior to an electricity trade or as it happens. Now ISO New England operates a single-settlement system that shows a single price to users. The new system also adds congestion management features for dealing with transmission congestion and differences in power consumption by regions.

ISO New England's efforts map with guidelines for exchanging data electronically that are being crafted by the Federal Energy Regulatory Commission (FERC) in an effort to make the electricity market more competitive.

Because the six ISOs that operate in the U.S. have their own operating rules and procedures, attempts to seamlessly exchange data now are "like having railroads with different gauge tracks," said van Welie.

The ISOs probably won't be required to meet the requirements envisioned by FERC's standard market design proposal until later this year or 2004. ISO New England plans to make any necessary changes to its new system in future upgrades, said van Welie and CIO Jamshid Afnan. But they added that the company wanted to get started in advance because the system should make its energy market operate more efficiently.

ISO New England's IT initiative "appears to put them ahead of the curve" on FERC's standardization proposal, said John Fringer, vice president of power services at Nicor Energy LLC, a natural-gas and electricity marketing company in Lisle, Ill. But, Fringer added, it will be "quite a task" to get the various ISOs and other market participants to adopt a common data-exchange format.

"We've been impressed with what ISO New England has done here," said Mike Roan, a regulatory specialist at Exelon PowerTeam, a marketing group of Kennett Square, Pa.-based Exelon Corp. Roan said he expects to get several business benefits from the new system, including increased access to information about the cost of energy consumption in different areas and where it would make the most sense to add generating plants. ▶

Other ISOs Also Prepare for Market Standardization

ISO New England may be ahead of the game in taking steps to comply with FERC's standard market design proposal, but that doesn't mean other energy industry ISOs are standing still.

For instance, California ISO is trying to address problems with its market structure that helped contribute to the California energy crisis in 2000 and 2001. The Folsom, Calif.-based company is shifting from a management system that breaks up the California energy market into just three regions to a new approach that would divide the market into dozens or even hundreds of regions, said spokesman Gregg Fishman.

Fishman said the new approach, as well as IT systems that will support it, should be in place later this year. In addition, California ISO this month plans to issue a request for proposals to technology vendors for bids on a transmission congestion management system. Fishman said he expects that system to be operational by early spring next year.

Because FERC's proposed guidelines were modeled to a great extent on ISOs in the Northeast, Guilderland, N.Y.-based New York ISO is already "closely aligned" with the proposal, said company spokesman Steve Sullivan.

New York ISO is working with a division of ABB Ltd., a Zurich-based vendor of power and automation technology, to develop a multisettlement system to replace its existing one, said Sullivan. The system is expected to cost "tens of millions of dollars" to develop and should be ready by mid-2004, he said, adding that the development schedule would be in line with FERC's vision for standardizing the national energy market.

– Thomas Hoffman

Continued from page 1

AlphaServer

chitecture that allows users to add processors, memory and I/O capacity "almost like Lego blocks," according to information posted on HP's Web site.

The servers will support multipath I/O technology for greater system availability and dynamic partitioning capabilities. The servers also come with a new system management console designed for centralized administration.

HP's Marvel plan says a lot about the company's intent to stick with its postmerger product commitments, said Fernando Yson, systems manager at Unicare/Cost Care. The Huntington Beach, Calif.-based health insurer has several small to midsize AlphaServers running homegrown applications.

When the time comes for an upgrade, it will most likely be to Itanium instead of Alpha because of HP's road map, Yson said. "But we are going to wait for other users to test it first before migrating."

The Pittsburgh Supercomputing Center, which has beta-tested the EV7-based servers, has ordered a "fair amount" of the systems, said Michael Levine, scientific director at the federally supported center.

The new servers will supplement the organization's existing 3,000-node AlphaServer cluster, the largest nondefense supercomputer in the country, according to Levine. The servers' very high bandwidth performance and interconnect technologies are what make them appealing, Levine said.

HP's decision to switch its server technology to Itanium in the future "doesn't make things any easier," said Levine. "But it is the sort of thing people are used to and should in most cases be manageable."

The new capabilities make for "faster, better, cheaper systems with much higher performance and much lower latency" than previous-generation Wildfire AlphaServers, said Terry Shannon, publisher of "Shannon Knows HPC," an Albuquerque, N.M.-based newsletter. The new servers should appeal to many larger users that would need years to migrate off Alpha, Shannon said.

Still, the migration issue is a thorny one.

"Last year, I would have said that this was some really great and exciting technology," said Rich Partridge, an analyst at D.H. Brown Associates Inc. in Port Chester, N.Y. But with Marvel likely to be the Alpha family's last hurrah, users must get commitments from HP that guarantee investment protection when they move to Itanium processors, he said.

HP has said it will support the Alpha installed base for as long as necessary. Its AlphaServer customer assurance program offers money-back guarantees, technology-refresh incentives, guaranteed trade-in values and transition lease programs for systems purchased through December 2003. ▶

Geac Adds CTO, Looks to Integrate Apps

BY MARC L. SONGINI

Geac Computer Corp. last week hired a new executive to manage both product development and internal IT operations as part of the business applications vendor's plan to prop up its sagging revenue and woo new users.

Markham, Ontario-based Geac announced that Timothy Wright is taking over as its chief technology officer and CIO. Wright, who previously held similar posts at Barcelona, Spain-based Internet service provider Terra Lycos SA, will oversee the planned development of a fully integrated suite of front- and back-office applications that support business-performance management.

"There's a huge opportunity for Geac to exploit the very high-quality installed base we have today — if we can put together the right collection of offerings [for] complete financial or operational performance management, and if we can integrate them with existing back-end solutions," Wright said.

[redacted]

Geac's revenue fell to $201.5 million in the first six months of its fiscal year, through Oct. 31, down from $232.4 million a year earlier.

As part of its effort to rebound, the company also is buying Extensity Inc., an Emeryville, Calif.-based vendor of employee expense, procurement and billing software, in a deal that was announced in August and is due to be completed next month.

Wright said Geac plans to more tightly couple Extensity's software with its own applications, building on a lower level of integration that's already in place. The move is intended to let Extensity users access data in Geac's back-office software, as well as in rival applications from vendors such as PeopleSoft Inc. and Oracle Corp.

Geac also is evaluating how to provide a middleware and Web services framework to its users, according to Wright. That may involve combining internally developed software or some of Extensity's technology with functionality gained from partnerships or another acquisition, he said.

John Hagerty, an analyst at AMR Research Inc. in Boston, said Geac in the past bought rival software vendors without fully exploiting the inherited technology. But now the company is taking "a more aggressive stance with partnerships and acquisitions," Hagerty added.

The new capabilities Geac is looking to field through the Extensity deal might be a good fit at GenCorp Inc.'s Aerojet-General Corp. division, said Michael Hursey, a financial specialist at the aerospace and defense manufacturing operation in Sacramento, Calif.

Because Aerojet works extensively for the government, it's required to do frequent audits of travel costs and other expenses, Hursey noted. Aerojet has been running Geac's M Series finance applications since 1990, he said. ◗

McDonald's Ends Network Project in Cost-Cutting Move

BY TODD R. WEISS

The new senior management team at McDonald's Corp. is looking to cut costs, and IT is one of the departments feeling the pinch.

McDonald's this month confirmed that it has stopped work on a networking project to connect about 30,000 restaurants worldwide to its headquarters in Oak Brook, Ill. The fast-food chain wouldn't disclose the project's total budget, but spokeswoman Lisa Howard said McDonald's will save "tens of millions of dollars" this year by curtailing the networking initiative.

The company also wouldn't say how many IT staffers were working on the project, which was known as Innovate. An internal memo about the project's demise said job cuts could follow, although it added that McDonald's will try to minimize any layoffs.

Innovate began in 1999 and was expected to help make McDonald's operations more efficient by integrating all of its restaurants in 121 countries. Deployment of the network was due to start this year in Canada and France.

But the project was scrapped because it "was not going to deliver near-term benefits" at a time when McDonald's is trying to improve its financial position, Howard said. She added that Innovate is now viewed as too costly compared with the operating improvements it was supposed to produce. "We have other ways to achieve [efficiency goals]," Howard said.

The decision on Innovate follows the hamburger chain's first-ever quarterly loss. McDonald's last month also announced a series of management changes, naming a new CEO, chief operating officer and vice chairman.

"Our new management team is focusing on the near term," Howard said. "They're looking at everything . . . and reviewing all aspects of our business." ◗

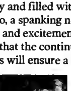
V2X Subsystem

PATRICIA KEEFE

No Rest in 2003

JANUARY IS THE MONDAY OF THE YEAR. The big-sigh, gotta-get-back-to-it, foot-dragging mentality permeates everything. It's excessively gray and filled with humorless resolve. Even so, a spanking new year is still cause for hope and excitement.

You might think that the continued theme of IT making do with less will ensure a low-key, running-in-place kind of existence. In fact, a lot is under way that will need action from IT. Hot spots include the following:



The transformation of some blue-chip IT providers. As a recent *Business Week* headline put it, "The new HP — how's it doing?"

Sure, postmerger, Hewlett-Packard CEO Carly Fiorina has managed to shed Compaq's Michael Capellas, cut 18,000 people and push up revenue. Several analysts rewarded the company last week by raising their 2003 forecasts.

But being the queen of printers won't take Fiorina very far. She needs to reignite overall sales growth, bolster a sagging enterprise computing operation, fend off Dell, meld two huge companies, keep customers happy *and* make more money.

IBM, meanwhile, under its new CEO, is pushing yet another all-encompassing new concept — "autonomic computing" — and has bought or is teaming up with all sorts of new partners, from Rational Software to AT&T.

The paths HP and IBM take, and the success they find, will affect most Fortune 1,000 IT shops in one form or another.

Balancing security needs with competing issues. Ironically, the first casualties of the war on terrorism are likely to be civil rights and privacy. But it won't stop there. The government will demand that reluctant corporations play ball on issues such as prompt and full disclosure of enterprise break-ins. Can customer and corporate data be protected?

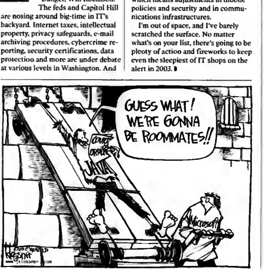
IT pros will have to walk a fine line to make sure that patches don't interfere with other applications, that users have sufficiently quick data access and that key internal information isn't handed over to outside companies in the name of increased security.

We're from the government, and we're looking to regulate. "Danger, Will Robinson!" The feds and Capitol Hill are nosing around big-time in IT's backyard. Internet taxes, intellectual property, privacy safeguards, e-mail archiving procedures, cybercrime reporting, security certifications, data protection and more are under debate at various levels in Washington. And actual legislation is looking likely. Already, we're seeing in some states the institution of "do-not-call" lists, stymieing telemarketers. It's worth keeping an ear to the ground and thinking ahead to how any legislation that passes will affect your company.

You've got mail - way too much of it. A new report from Ferris Research claims that spam accounts for 15% to 20% of what's in the corporate mailbox and will cost U.S. companies more than $10 billion this year. There are existing and pending regulations regarding e-mail archiving. Instant messaging services and usage have exploded. Messaging issues must be dealt with in 2003.

Little IT: wireless networks, the proliferation of handhelds and the arrival of even more small, mobile devices. As equipment makers insert Wi-Fi into mobile devices and coalitions form to create Wi-Fi networks, the technology will become ubiquitous. Pricing for handhelds is dropping, and even more nifty devices are on the horizon, which means adjustments in mobile policies and security and in communications infrastructures.

I'm out of space, and I've barely scratched the surface. No matter what's on your list, there's going to be plenty of action and fireworks to keep even the sleepiest of IT shops on the alert in 2003. ■



PIMM FOX

Don't Leave OS Choice to Developers

THE PAIN IN MY HEAD isn't from a wild New Year's, but from the torrent of e-mails I've been reading from eager and enthusiastic Linux fans responding to a recent column [QuickLink 35071]. Indeed, at the risk of igniting more claims of my alleged Microsoft bias and my personal stupidity, I think it fair to respond to some of the general protests.

First, I believe IT managers should dictate the operating system of choice for an organization, not developers, who overwhelmingly wrote to me about the virtues of Linux. If your company wants to run Microsoft Access or Office 2000 instead of StarOffice, then your operating system choice is going to be made for you without regard to TCO or the technical advantages of Linux.

Second, perhaps I didn't make it clear: If you want to run something generic, such as a Web server farm, and you're not dependent on an NT domain, go ahead and run Apache on Linux. It's fairly cheap, and yes, as dozens of you told me, it's stable.

But what if you want to run a Web site programming environment like ColdFusion? It runs only in certain environments, and I have yet to see one in Linux (though I'm willing to learn).

What I did learn from all the e-mails is that Linux has become an emotional touchstone for developers. And that, I'm afraid, doesn't wash.

Choosing an operating system shouldn't depend on developer preference, but on what the organization needs to do. Sure, a developer may choose Linux with 4 million lines of code vs. .Net with 30 million, but developers get paid to develop based on end-user needs. The mission determines the tools, not the other way around.

People have derided Cobol, IBM's procedural language, since the 1960s.

It's been called the most verbose and inelegant of computer languages, and yet there are more lines of Cobol pumping out paychecks than anything else. So despite its Cobol-like bulk and clumsiness, Windows' ubiquity and usefulness make it vital if you're trying to make a deadline using PageMaker or Photoshop; they don't run on Linux.

Finally, one e-mail blasted me by saying that scientists at the Fermi National Accelerator Laboratory use Linux, from the desktop to supercomputers. That makes sense — they're highly technical professionals, most of whom can write their own programs and have experience with Unix. Making them switch to Windows wouldn't make sense. What I tried to stress was that there are no general rules for Linux TCO. Rather, you've got to do your own homework, without getting worked up into a fanatical froth. ▮

DAVID MOSCHELLA

'Utility' Model Needs Better Focus

RECENTLY, there has been a great deal of talk about the viability of the "utility model," the idea that information, just like water, gas, electricity and phone service, should be provided on demand via some sort of largely transparent conduit. It's an important concept and already a powerful IT industry trend, but I suspect I'm not the only one perplexed by the odd disconnect between rhetoric and reality.

Part of the problem is the word *utility* itself. Last I checked, most utility companies were still quasi-monopolies known for plodding, if generally reliable, service. Despite recent attempts at deregulation, it would be hard to think of a less innovative and dynamic part of the U.S. economy. It's telling that the broadcast business, which employs a similar automated delivery model, never refers to itself in this way. Neither should the IT industry. *Utility* has all the wrong connotations.

What we're really talking about is replacing the use of customer-managed hardware and software products with various third-party IT services delivered over a widely shared network, typically the Internet.

But if you accept this definition, then it's clear that many of us moved to the utility approach a long time ago. Certainly, most individuals (as well as many businesses) who have their own Web sites prefer to rely on Web hosting services, where you pay per megabyte of storage, gigabyte of traffic, number of e-mail addresses and other usage-based metrics. There's not much doubt that this style of computing will become increasingly important for an ever-wider range of applications.

And yet IBM, HP, Sun and others that talk about the utility model rarely mention consumer/small business Web usage (probably because they don't do a lot of business in the low end of the Web hosting market). Instead, they typically focus on large corporations, using exotic phrases such as *grid computing* and *data center virtualization*. They do this even though they know perfectly well that large organizations will likely be the last segment to move wholeheartedly toward the services model.

This disconnect between the real market and the current supplier marketing focus seems likely to continue. The reality is that the appeal of services-based computing is inversely proportional to the difficulty of the task at hand. This means that complex and frequently changing business processes will be the hardest IT activities to put inside a remote black box. Although such work can always be outsourced, the necessary customization doesn't go away.

More fundamentally, the essence of the utility model is the provision of largely homogeneous services on a societywide basis. Whereas traditional utility-led industries have powerful economies of scale and are therefore often viewed as natural monopolies, the computer business doesn't work this way. Unlike software tools and applications, the scale economies of computing services are quite limited, with very low barriers to entry. This is why the Web hosting and Internet service provider businesses remain so fragmented.

Consequently, while some services consolidation will no doubt occur, we'll probably never see a few companies dominate the online computing business. In the end, this is why the word *utility* is so misleading. The big hardware suppliers might want you to think that only they can provide the powerful services infrastructure the IT industry needs, but the market is already proving otherwise. ▮

WANT OUR OPINION?

More columnists and links to archives of previous columns are on our Web site
www.computerworld.com/columns

READERS' LETTERS

Try Klingon

***S-RO PETRELEY** rimarkas, en lia artikolo "Digital Rights and Wrongs," ke la CableX specifo estos en la lingvo Esperanto. Tiuokaze, proksimume du milionoj da personoj tutmonde povos legi gxin. Mi sugestas, ke Mikrosoft anstataux aperigu gxin en Volapuk aux Klingono, aux eble VCR-Japana.*

(Mr. Petreley notes, in his article "Digital Rights and Wrongs" [QuickLink 34825], that the CableX specification will be in the language Esperanto. In that case, about 2 million people worldwide will be able to read it. I suggest that Microsoft instead should publish it in Volapuk or Klingon, or perhaps VCR-Japanese.)

David Wolff
Senior software engineer,
Acton, Mass.,
cweo@dwolff.users.panix.com

Get to the Root

SECURITY MANAGER "Mathias Thurman" may feel he has reached endgame in locating his rogue AP, but he has addressed only a single outbreak and hasn't solved the cause of the problem [QuickLink 34509]. Someone obviously went to a bit of trouble to install that AP and to then somewhat conceal its presence. What efforts were expended to determine who did this and why? Simply removing rogue APs without a follow-up won't resolve the problem. Policies and procedures must be established to address the rogue modification of the networks and to educate the user community of the concerns such implementations raise. These policies need teeth, and there must be a consequence to recklessly or intentionally placing the corporation at risk.

R.A. "Bob" Tremonti
Risk management consultant,
Dolomite Consulting, North
Vancouver, British Columbia

Locking Up Servers

THE FIREWALL IS NOT, and never was, anything but a perimeter safety net [QuickLink 34749]. Firewalls operate at Layers 3 and 4 of the OSI network model, and network attacks most often occur at Layer 7. As such, a firewall is designed only to attempt to help reinforce a secure environment by blocking types of network traffic that the servers definitely aren't hosting. Security must be built at the server. A properly secured network would, in fact, have no need for a firewall. One might even conclude that by implementing a firewall, you are providing a false sense of security. To put it in layman's terms, the firewall would be like having a brick wall around a house. It doesn't eliminate the need for the locks on the doors and windows, but only helps to deter the entrance of those who haven't been invited, assuming they are of good nature. To keep the bad people out, locks and alarms must still be installed

Armand Welsh
Information security officer,
State Street IMS West,
Newport Beach, Calif.,
armand.welsh@sscims.com

Security Standard

THE DEC. 16 ARTICLE on Sprint's guidelines for vendors relating to the security of software products [QuickLink 35087] briefly mentions a Department of Defense directive dealing with this same issue. This directive is the Common Criteria (CC) certification for all new national security systems. However, CC is much more than a DOD directive, as it is now recognized by 15 nations, and more than 20 labs across the world can certify that products are CC-compliant. In other words, a global standard relating to computer security is emerging that can serve both government and commercial enterprises. CC in the U.S. replaces the NSA's old Orange Book program, which was fraught with problems and lacked international acceptance. Users want (and deserve) some type of guarantee that the software tools they use don't have any back doors and are produced and maintained to the highest standards

It's my belief that more companies like Sprint will start demanding that the security products they use have the CC certification. Can you imagine any major company not using UL-certified electrical products? Why shouldn't software security products undergo similar scrutiny?

John Doyle
Sales director,
STAT product line, Harris
Corp., Melbourne, Fla.

COMPUTERWORLD welcomes comments from its readers. Letters will be edited for brevity and clarity. They should be addressed to Letters, Computerworld, PO Box 9171, 500 Old Connecticut Path, Framingham, Mass. 01701. Fax: (508) 879-4843. E-mail: letters@computerworld.com. Include an address and phone number for immediate verification

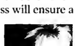
More letters on these and other topics are on our Web site.
computerworld.com/letters

PATRICIA KEEFE

No Rest in 2003

JANUARY IS THE MONDAY OF THE YEAR. The big-sigh, gotta-get-back-to-it, foot-dragging mentality permeates everything. It's excessively gray and filled with humorless resolve. Even so, a spanking new year is still cause for hope and excitement.

You might think that the continued theme of IT making do with less will ensure a low-key, running-in-place kind of existence. In fact, a lot is under way that will need action from IT. Hot spots include the following:



PATRICIA KEEFE is a *Computerworld* editor at large. You can contact her at patricia_keefe@computerworld.com.

The transformation of some blue-chip IT providers. As a recent *Business Week* headline put it, "The new HP — how's it doing?"

Sure, postmerger, Hewlett-Packard CEO Carly Fiorina has managed to shed Compaq's Michael Capellas, cut 18,000 people and push up revenue. Several analysts rewarded the company last week by raising their 2003 forecasts.

But being the queen of printers won't take Fiorina very far. She needs to reignite overall sales growth, bolster a sagging enterprise computing operation, fend off Dell, meld two huge companies, keep customers happy and make more money.

IBM, meanwhile, under its new CEO, is pushing yet another all-encompassing new concept — "autonomic computing" — and has bought or is teaming up with all sorts of new partners, from Rational Software to AT&T.

The paths HP and IBM take, and the success they find, will affect most Fortune 1,000 IT shops in one form or another.

Balancing security needs with competing issues. Ironically, the first casualties of the war on terrorism are likely to be civil rights and privacy. But it won't stop there. The government will demand that reluctant corporations play ball on issues such as prompt and full disclosure of enterprise break-ins. Can customer and corporate data be protected?

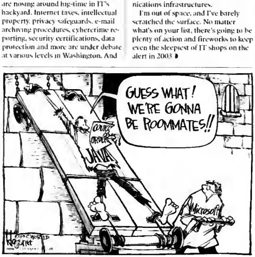
IT pros will have to walk a fine line to make sure that patches don't interfere with other applications, that users have sufficiently quick data access and that key internal information isn't handed over to outside companies in the name of increased security.

We're from the government, and we're looking to regulate. "Danger, Will Robinson!" The feds and Capitol Hill are nosing around big-time in IT's backyard. Internet taxes, intellectual property, privacy safeguards, e-mail archiving procedures, cybercrime reporting, security certifications, data protection and more are under debate at various levels in Washington. And actual legislation is looking likely. Already, we're seeing in some states the institution of "do-not-call" lists, stymieing telemarketers. It's worth keeping an ear to the ground and thinking ahead to how any legislation that passes will affect your company.

You've got mail – way too much of it. A new report from Ferris Research claims that spam accounts for 15% to 20% of what's in the corporate mailbox and will cost U.S. companies more than $10 billion this year. There are existing and pending regulations regarding e-mail archiving. Instant messaging services and usage have exploded. Messaging issues must be dealt with in 2003.

Little IT: wireless networks, the proliferation of handhelds and the arrival of even more small, mobile devices. As equipment makers insert Wi-Fi into mobile devices and coalitions form to create Wi-Fi networks, the technology will become ubiquitous. Pricing for handhelds is dropping, and even more nifty devices are on the horizon, which means adjustments in mobile policies and security and in communications infrastructures.

I'm out of space, and I've barely scratched the surface. No matter what's on your list, there's going to be plenty of action and fireworks to keep even the sleepiest of IT shops on the alert in 2003 ◗



PIMM FOX

Don't Leave OS Choice to Developers

THE PAIN IN MY HEAD isn't from a wild New Year's, but from the torrent of e-mails I've been reading from eager and enthusiastic Linux fans responding to a recent column [QuickLink 35071]. Indeed, at the risk of igniting more claims of my alleged Microsoft bias and my personal stupidity, I think it fair to respond to some of the general protests.

First, I believe IT managers should dictate the operating system of choice for an organization, not developers, who overwhelmingly wrote to me about the virtues of Linux. If your company wants to run Microsoft Access or Office 2000 instead of StarOffice, then your operating system choice is going to be made for you without regard to TCO or the technical advantages of Linux.

PIMM FOX is a freelance writer in San Francisco. Contact him at pimmfox@pacbell.net.

Second, perhaps I didn't make it clear: If you want to run something generic, such as a Web server farm, and you're not dependent on an NT domain, go ahead and run Apache on Linux. It's fairly cheap, and yes, as dozens of you told me, it's stable.

But what if you want to run a Web site programming environment like ColdFusion? It runs only in certain environments, and I have yet to see one in Linux (though I'm willing to learn).

What I did learn from all the e-mails is that Linux has become an emotional touchstone for developers. And that, I'm afraid, doesn't wash.

Choosing an operating system shouldn't depend on developer preference, but on what the organization needs to do. Sure, a developer may choose Linux with 4 million lines of code vs. .Net with 30 million, but developers get paid to develop based on end-user needs. The mission determines the tools, not the other way around.

People have derided Cobol, IBM's procedural language, since the 1960s.

It's been called the most verbose and inelegant of computer languages, and yet there are more lines of Cobol pumping out paychecks than anything else. So despite its Cobol-like bulk and clumsiness, Windows' ubiquity and usefulness make it vital if you're trying to make a deadline using PageMaker or Photoshop; they don't run on Linux.

Finally, one e-mail blasted me by saying that scientists at the Fermi National Accelerator Laboratory use Linux, from the desktop to supercomputers. That makes sense — they're highly technical professionals, most of whom can write their own programs and have experience with Unix. Making them switch to Windows wouldn't make sense. What I tried to stress was that there are no general rules for Linux TCO. Rather, you've got to do your own homework, without getting worked up into a fanatical froth ◗

DAVID MOSCHELLA

'Utility' Model Needs Better Focus

RECENTLY, there has been a great deal of talk about the viability of the "utility model," the idea that information, just like water, gas, electricity and phone service, should be provided on demand via some sort of largely transparent conduit. It's an important concept and already a powerful IT industry trend, but I suspect I'm not the only one perplexed by the odd disconnect between rhetoric and reality.

Part of the problem is the word *utility* itself. Last I checked, most utility companies were still quasi-monopolies known for plodding, if generally reliable, service. Despite recent attempts at deregulation, it would be hard to think of a less innovative and dynamic part of the U.S. economy. It's telling that the broadcast business, which employs a similar automated delivery model, never refers to itself in this way. Neither should the IT industry. *Utility* has all the wrong connotations.

What we're really talking about is replacing the use of customer-managed hardware and software products with various third-party IT services delivered over a widely shared network, typically the Internet.

DAVID MOSCHELLA is an author and independent consultant. Contact him at dmoschella@earthlink.net

But if you accept this definition, then it's clear that many of us moved to the utility approach a long time ago. Certainly, most individuals (as well as many businesses) who have their own Web sites prefer to rely on Web hosting services, where you pay per megabyte of storage, gigabyte of traffic, number of e-mail addresses and other usage-based metrics. There's not much doubt that this style of computing will become increasingly important for an ever-wider range of applications.

And yet IBM, HP, Sun and others that talk about the utility model rarely mention consumer/small business Web usage (probably because they don't do a lot of business in the low end of the Web hosting market). Instead, they typically focus on large corporations, using exotic phrases such as *grid computing* and *data center virtualization*. They do this even though they know perfectly well that large organizations will likely be the last segment to move wholeheartedly toward the services model.

This disconnect between the real market and the current supplier marketing focus seems likely to continue. The reality is that the appeal of services-based computing is inversely proportional to the difficulty of the task at hand. This means that complex and frequently changing business processes will be the hardest IT activities to put inside a remote black box. Although such work can always be outsourced, the necessary customization doesn't go away.

More fundamentally, the essence of the utility model is the provision of largely homogeneous services on a societywide basis. Whereas traditional utility-led industries have powerful economies of scale and are therefore often viewed as natural monopolies, the computer business doesn't work this way. Unlike software tools and applications, the scale economies of computing services are quite limited with very low barriers to entry. This is why the Web hosting and Internet service provider businesses remain so fragmented.

Consequently, while some services consolidation will no doubt occur, we'll probably never see a few companies dominate the online computing business. In the end, this is why the word *utility* is so misleading. The big hardware suppliers might want you to think that only they can provide the powerful services infrastructure the IT industry needs, but the market is already proving otherwise ◗

WANT OUR OPINION?

More columnists and links to archives of previous columns are on our Web site.
www.computerworld.com/columns

READERS' LETTERS

Try Klingon

***S-RO PETRELEY** rimarkas, en lia artikolo "Digital Rights and Wrongs," ke la CableX specifo estos en la lingvo Esperanto. Tiuokaze, proksimume du milionoj da personoj tutmonde povos legi gxin. Mi sugestas, ke Mikrosoft anstataux apengu gxin en Volapuk aux Klingono, aux eble VCR-Japana.*

(Mr. Petreley notes, in his article "Digital Rights and Wrongs" [QuickLink 34825], that the CableX specification will be in the language Esperanto. In that case, about 2 million people worldwide will be able to read it. I suggest that Microsoft instead should publish it in Volapuk or Klingon, or perhaps VCR-Japanese.)

David Wolff
Senior software engineer,
Acton, Mass.,
cwen@dwolff.users.panix.com

Get to the Root

SECURITY MANAGER "Mathias Thurman" may feel he has reached endgame in locating his rogue AP, but he has addressed only a single outbreak and hasn't solved the cause of the problem [QuickLink 34509]. Someone obviously went to a bit of trouble to install that AP and to then somewhat conceal its presence. What efforts were expended to determine who did this and why? Simply removing rogue APs without a follow-up won't resolve the problem. Policies and procedures must be established to address the rogue modification of the networks and to educate the user community of the concerns such implementations raise. These policies need teeth and there must be a consequence to recklessly or intentionally placing the corporation at risk.

R.A. "Bob" Tremonti
Risk management consultant,
Dolomite Consulting, North
Vancouver, British Columbia

Locking Up Servers

THE FIREWALL IS NOT, and never was, anything but a perimeter safety net [QuickLink 34749]. Firewalls operate at Layers 3 and 4 of the OSI network model, and network attacks most often occur at Layer 7. As such, a firewall is designed only to attempt to help reinforce a secure environment by blocking types of network traffic that the servers definitely aren't hosting. Security must be built at the server. A properly secured network would, in fact, have no need for a firewall. One might even conclude that by implementing a firewall, you are providing a false sense of security. To put it in layman's terms, the firewall would be like having a brick wall around a house. It doesn't eliminate the need for the locks on the doors and windows, but only helps to deter the entrance of those who haven't been invited, assuming they are of good nature. To keep the bad people out, locks and alarms must still be installed.

Armand Welsh
Information security officer,
State Street IMS West,
Newport Beach, Calif.,
armand.welsh@sscims.com

Security Standard

THE DEC. 16 ARTICLE on Sprint's guidelines for vendors relating to the security of software products [QuickLink 35087] briefly mentions a Department of Defense directive dealing with this same issue. This directive is the Common Criteria (CC) certification for all new national security systems. However, CC is much more than a DOD directive, as it is now recognized by 15 nations, and more than 20 labs across the world can certify that products are CC-compliant. In other words, a global standard relating to computer security is emerging that can serve both government and commercial enterprises. CC in the U.S. replaces the NSA's old Orange Book program, which was fraught with problems and lacked international acceptance. Users want (and deserve) some type of guarantee that the software tools they use don't have any back doors and are produced and maintained to the highest standards.

It's my belief that more companies like Sprint will start demanding that the security products they use have the CC certification. Can you imagine any major company not using UL-certified electrical products? Why shouldn't software security products undergo similar scrutiny?

John Doyle
Sales director,
STAT product line, Harris
Corp., Melbourne, Fla.

COMPUTERWORLD welcomes comments from its readers. Letters will be edited for brevity and clarity. They should be addressed to Letters, Computerworld, PO Box 9171, 500 Old Connecticut Path, Framingham, Mass. 01701. Fax (508) 879-4843. E-mail: letters@computerworld.com. Include an address and phone number for immediate verification.

More letters on these and other topics are on our Web site.
computerworld.com/letters

TECHNOLOGY

01.13.03

CASE STUDY

Dallas Answers the Call

The city deploys an integrated call system to become more responsive to citizens and to track performance. Other municipalities and event-driven businesses may follow suit. **Page 28**

FUTURE WATCH

Pervasive Computing Gets Organized

For pervasive computing to reach its potential, numerous devices and systems will have to interoperate. Vince Stanford (left) is among those working on a needed data-flow standard at NIST. **Page 32**

SECURITY MANAGER'S JOURNAL

Spam Issue Viewed As IT Security Failure

After a surge in spam puts Vince Tuesday on the defensive with users, a new service cleans up the problem and saves his reputation. **Page 36**

CRM OPENS UP

Vendors are pushing both the use of enterprise suites and new integration tools as ways to mesh CRM with other enterprise applications. By Marc L. Songini

As customer relationship management (CRM) technology has matured, users have begun looking for bigger payoffs by enabling better integration with other enterprise applications. For instance, companies that want to let their customers view the status of their orders in real time might need to connect their call center or e-commerce applications to supply chain or manufacturing systems.

"The notion that CRM is largely a stand-alone sales force automation function is no longer valid," says Joshua Greenbaum, an analyst at Enterprise Applications Consulting in Daly City, Calif. "[Users] realize that CRM is central to many supply chain functions, such as order tracking and management, logistics and service."

But making those applications talk with one another isn't easy. One way to solve this problem is to migrate to an integrated enterprise application integration (EAI) suite from vendors such as SAP AG, Oracle Corp. or PeopleSoft Inc. These products have prebuilt integration hooks that ease application-sharing headaches. They also include tool kits or adapters to hook the suite applications to other vendors' modules. By using the suite vendors' tool sets and prepackaged processes, you can cut integration costs involved with custom coding and consulting. But even if you're willing to invest in such a migration effort, individual suite applications might not always have the features you require.

Users who go the best-of-breed

DAVID PLUNKERT/SPUR DESIGN

CRM OPENS UP

Continued from page 23

route and use applications from companies such as San Mateo, Calif.-based Siebel Systems Inc. can use built-in integration capabilities, says Erin Kinikin, an analyst at Cambridge, Mass.-based Giga Information Group Inc. For instance, Siebel is rolling out its Web services-based Universal Application Network framework to connect applications and allow business-process integration.

Other CRM software vendors, including Menlo Park, Calif.-based Kana Software Inc., Cupertino, Calif.-based Chordiant Software Inc. and Cambridge, Mass.-based PegaSystems Inc., also offer products that enable integration at the business-process level.

"These vendors tend to do best at customer-facing or partner-facing applications, where there's lots of integration required and processes change frequently," Kinikin says.

Suite Connections

Ottawa-based Canada Post Corp. took the suite route after dealing with the aggravation of linking multiple applications. "In the pre-Y2k world of our systems landscape, we had best-of-breed and custom-developed interfaces tying it together, and it was a real mess," says Aaron Nichols, general manager of business transformation at Canada Post. "It was tough to manage and hard to make changes."

Integrating disparate applications was possible, but it was complex and expensive because the software was passing information related to orders, pricing and contracts, he says. Because of this and the challenges of business-process re-engineering and change management in the organization, Canada Post decided to install SAP's CRM and enterprise resource planning (ERP) modules.

Using Web services, Canada Post has also connected its Web site to the SAP system so it can take orders and connect them directly to the ERP system. The mail carrier also built an interface to its legacy tracking software to let customers track parcel deliveries.

When Canada Post went live with SAP CRM 2.0, the technology was immature, Nichols says. And there were many questions to sort out, such as whether the master customer profiles should reside in the CRM system or the R/3 system. Nichols plans to move to Version 3.0, which he says is a more mature product with a broader range of CRM features.

The CRM system has both prebuilt and homegrown interfaces. The connectors between the SAP CRM and R/3 applications that handle workflow came out of the box, but they required a bit of tuning. "We had to spend some time understanding them," Nichols says. The connectors allow call center workers to access a customer's case history from the back-end systems by entering a phone number. They also allow the system to route individual cases into the human resources system to determine whom to send them to for resolution.

Canada Post's order-taking system isn't an SAP product, but it ties into the back-end R/3 software by way of eGate EAI software from Monrovia, Calif.-based SeeBeyond Technology Corp.

EGate handles all data going in and out of the SAP system. Nichols says business-process designers crafted each interface to select the requisite data that needed to be mapped and passed back and forth, and they developed error-handling routines. Once the designs were finalized, they were given to an integrator, who built, tested and deployed the architecture.

Nichols says the integration project has resulted in a consolidated set of systems with tightly linked business processes and a common view for all customers. "We eliminated over 80 legacy systems and reduced labor costs by eliminating duplication and waste in processes," he says.

Siebel in the Middle

Suites may claim easier integration, but Jay Gardner, CIO at BMC Software Inc., says mixing and matching different CRM and ERP applications wasn't a big deal. "There is definitely value to an integrated application, but I don't think I have to have [all applications] from a single vendor," he says. Although Gardner says he wouldn't want to link together five different systems, two front- and back-office suites are manageable, he says.

BMC recently connected its Siebel sales force automation system to its Oracle financials backbone to automate order processing on the Web. The Houston-based maker of management applications has also connected a Siebel installation to its call system from Vantive Corp. (now part of PeopleSoft). The Siebel system also pulls information from a document management system, which allows support workers to view images of customer contracts. Information sharing among the Web team and the inside sales, direct sales and support staffs has generated a faster turnaround on potential sales leads, Gardner says.

BMC initially wrote its own custom interfaces for these applications but now plans to use EAI software from WebMethods Inc. in Fairfax, Va., to simplify future connectivity. The WebMethods system, in pilot since June, provides more extensive coding capabilities than BMC's legacy systems allow, Gardner says.

For instance, it enables a "publish and subscribe" model that lets BMC connect applications that need to share data with WebMethods without having to write separate point-to-point interfaces for each one. BMC also plans to configure its Siebel application to generate XML as its common CRM document format, so that the WebMethods XML adapter can parse it. BMC will then use Web services to establish data synchronization between applications, Gardner says.

Going forward, both suite and best-of-breed CRM vendors point to their support for Web services as the glue that will hold disparate systems together. But, says Giga's Kinikin, "the reality is that Web services is a five- to 10-year evolution, not a magic answer. We're at the very beginning of a new journey."

And even after Web services are established, she says, IT will still need to incorporate process flows, metadata and semantics-based standards such as electronic data interchange. ◆

Vendor Approaches to CRM Integration

Oracle Corp.

Oracle touts the value of its integrated business application suite, but it also offers integration with competitors' products using prebuilt transformation adapters. These adapters allow data to be exposed for use with standard Web services technologies such as XML, Simple Object Access Protocol (SOAP) and Universal Discovery Description and Integration. But "[Oracle] still is largely interested in just keeping users vanilla with its products," says Steve Bonadio, an analyst at Meta Group Inc. in Stamford, Conn.

PeopleSoft Inc.

PeopleSoft claims to offer easy integration for its CRM customers through its AppConnect data integration broker, data warehouse and portal middleware tools. The vendor has a "pure technology" approach, relying on its portal as the presentation aggregator, says Bonadio. The company also offers support for XML-based Web services connectivity.

SAP AG

SAP takes a similar tack by offering its own application server product and portal to facilitate CRM data integration. It relies on the SAP Web application server, mySAP Portal and messaging exchange technologies to permit users to map CRM documents to general business documents using SOAP and XML technologies.

Siebel Inc.

With its newly announced Universal Application Network (UAN), Siebel appears to be the most forward-thinking in viewing integration as a way to craft business processes, Bonadio says. UAN is a series of Web services and XML-based business-process library specifications that, according to the company, make it easier to connect Siebel's CRM applications to homegrown systems and other packaged applications.

MERGING ERP WITH CRM

Developers were the key to a successful integration project at InterLink:

QuickLink 34342
www.computerworld.com

CRM OPENS UP

Continued from page 23

route and use applications from companies such as San Mateo, Calif.-based Siebel Systems Inc. can use built-in integration capabilities, says Erin Kinikin, an analyst at Cambridge, Mass.-based Giga Information Group Inc. For instance, Siebel is rolling out its Web services-based Universal Application Network framework to coonect applications and allow business-process integration.

Other CRM software vendors, including Menlo Park, Calif.-based Kana Software Inc., Cupertino, Calif.-based Chordiant Software Inc. and Cambridge, Mass.-based PegaSystems Inc., also offer products that enable integration at the business-process level.

"These vendors tend to do best at customer-facing or partner-facing applications, where there's lots of integration required and processes change frequently," Kinikin says.

Suite Connections

Ottawa-based Canada Post Corp. took the suite route after dealing with the aggravation of linking multiple applications. "In the pre-Y2k world of our systems landscape, we had best-of-breed and custom-developed interfaces tying it together, and it was a real mess," says Aaron Nichols, general manager of business transformation at Canada Post. "It was tough to manage and hard to make changes."

Integrating disparate applications was possible, but it was complex and expensive because the software was passing information related to orders, pricing and contracts, he says. Because of this and the challenges of business-process re-engineering and change management in the organization, Canada Post decided to install SAP's CRM and enterprise resource planning (ERP) modules.

Using Web services, Canada Post has also connected its Web site to the SAP system so it can take orders and connect them directly to the ERP system. The mail carrier also built an interface to its legacy tracking software to let customers track parcel deliveries.

When Canada Post went live with SAP CRM 2.0, the technology was immature, Nichols says. And there were many questions to sort out, such as whether the master customer profiles should reside in the CRM system or the R/3 system. Nichols plans to move to Version 3.0, which he says is a more mature product with a broader range of CRM features.

The CRM system has both prebuilt and homegrown interfaces. The connectors between the SAP CRM and R/3 applications that handle workflow came out of the box, but they required a bit of tuning. "We had to spend some time understanding them," Nichols says. The connectors allow call center workers to access a customer's case history from the back-end systems by entering a phone number. They also allow the system to route individual cases into the human resources system to determine whom to send them to for resolution.

Canada Post's order-taking system isn't an SAP product, but it ties into the back-end R/3 software by way of eGate EAI software from Monrovia, Calif.-based SeeBeyond Technology Corp.

EGate handles all data going in and out of the SAP system. Nichols says business-process designers crafted each interface to select the requisite data that needed to be mapped and passed back and forth, and they developed error-handling routines. Once the designs were finalized, they were given to an integrator, who built, tested and deployed the architecture.

Nichols says the integration project has resulted in a consolidated set of systems with tightly linked business processes and a common view for all customers. "We eliminated over 80 legacy systems and reduced labor costs by eliminating duplication and waste in processes," he says.

Siebel in the Middle

Suites may claim easier integration, but Jay Gardner, CIO at BMC Software Inc., says mixing and matching different CRM and ERP applications wasn't a big deal. "There is definitely value to an integrated application, but I don't think I have to have [all applications] from a single vendor," he says. Although Gardner says he wouldn't want to link together five different systems, two front- and back-office suites are manageable, he says.

BMC recently connected its Siebel sales force automation system to its Oracle financials backbone to automate order processing on the Web. The Houston-based maker of management applications has also connected a Siebel installation to its call system from Vantive Corp. (now part of PeopleSoft). The Siebel system also pulls information from a document management system, which allows support workers to view images of customer contracts. Information sharing among the Web team and the inside sales, direct sales and support staffs has generated a faster turnaround on potential sales leads, Gardner says.

BMC initially wrote its own custom interfaces for these applications but now plans to use EAI software from WebMethods Inc. in Fairfax, Va., to simplify future connectivity. The WebMethods system, in pilot since June, provides more extensive coding capabilities than BMC's legacy systems allow, Gardner says.

For instance, it enables a "publish and subscribe" model that lets BMC connect applications that need to share data with WebMethods without having to write separate point-to-point interfaces for each one. BMC also plans to configure its Siebel application to generate XML as its common CRM document format, so that the WebMethods XML adapter can parse it. BMC will then use Web services to establish data synchronization between applications, Gardner says.

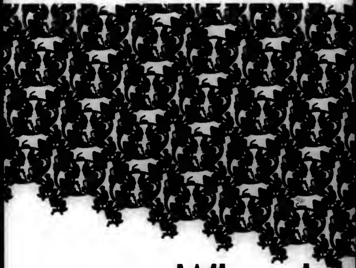
Going forward, both suite and best-of-breed CRM vendors point to their support for Web services as the glue that will hold disparate systems together. But, says Giga's Kinikin, "the reality is that Web services is a five- to 10-year evolution, not a magic answer. We're at the very beginning of a new journey."

And even after Web services are established, she says, IT will still need to incorporate process flows, metadata and semantics-based standards such as electronic data interchange. ▶

MERGING ERP WITH CRM

Developers were the key to a successful integration project at InterLink.

QuickLink 34342
www.computerworld.com



FlexSel
FlexSel
FlexSel

DALLAS ANSWERS THE CALL

A newly integrated 311 call-taking system for all city services helps initiate action and track performance.

BY SAMI LAIS

ONE YEAR AGO, on Jan. 13, 2002, the Dallas municipal IT department flipped the switch on a $5 million automated citizen-request management system.

From that moment on, city residents could make their 1.1 million annual calls for city services to one number, 311. And through that number, they could do everything from finding out when a pothole would be repaired to reporting a missed trash pickup to checking on a water bill.

In what is becoming a model for other municipalities and event-driven businesses, the Dallas system automatically routes requests to the appropriate departments and tracks them to ensure that service-level agreements are met. It runs on a central Oracle Parallel Server (OPS) and a centralized requests database, but each city department controls access to its own data and applications.

The system was in the planning stage for two years but went live after a scant six months for installation and testing. It was an immediate success, and the mood in the Dallas data center after the launch last January was exultant, says Dan McFarland, the city's CIO. A week later, however, things didn't look so rosy. An ongoing disaster recovery test, begun the week before the system went live, had crashed one of the system's two redundant servers from Suncoast Scientific Inc., a Motorola Inc. company in Shalimar, Fla. "It was abysmal," Jon Bigelow, the city's 311 project coordinator, says of the test. "How do you know you've got a good backup? Unless you test it, you don't know."

Although most glitches were minor and fixed by the end of January, the cause of the crash wasn't discovered for another month. "Installation settings from the backups were wrong," says Bigelow. With the settings corrected, backups worked properly, which cleared the roadblock standing in the way of disaster recovery.

But then software snags began to arise. As the first user to run Motorola's Customer Service Request (CSR) system on Oracle Corp.'s OPS, "we had some issues," Bigelow says. For example, application response time was "horrendous," he says. It should have been near instantaneous but instead took from minutes to an hour for one city department. Furthermore, the system required a complete reboot every 36 hours to keep it from slowing to a halt.

It wasn't until mid-March that the source of the slowdown was identified. "The Oracle people were instructing our people, and the Motorola DBA was watching and said, 'Something's not right here. That parameter is set wrong,' " says Bigelow.

Correcting that setting not only alleviated most of the response time lag, but it also allowed the removal of diagnostic software that had been using needed resources, he says.

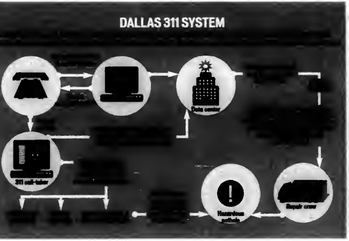
By late summer, all major city departments except for the water department were on the 311 system. The water department was still testing an interface between the customer relationship management system and its billing systems and evaluating whether requests involved too much data outside the scope of CSR, Bigelow says.

Good backups were running without incident.

Some geodata errors were still occurring with about 10% of the information about streets, but that shouldn't be a problem after the next release of CSR, Bigelow says. That version will interface with the city's geographic information system (GIS), which is based on GIS software from Environmental Systems Research Institute (ESRI) in Redlands, Calif.

Support from Motorola has been good, but the geodata errors reveal a drawback to the package software, he says. "It's proprietary software. If you need to make a change, you have to go to Motorola. While users can correct their geodata, no audit trail was incorporated into this portion of the product, so you can't track changes. We would like to change that, but the change has to come from Motorola. We're chomping at the bit for the ESRI interface," Bigelow says. "On the upside, we seem to be contributing to the road map for this product. A lot of what the departments have asked for has been implemented in the product."

When McFarland first came to Dallas in April 1999 and envisioned this clockwork system, the city faced



formidable hurdles. City databases and systems were splintered onto multiple applications and platforms, including some applications running under a homegrown mainframe operating system. Groundwork included converting to OS/390; consolidating the city's tax, court, building inspection and GIS databases onto an Oracle database; and standardizing 520 request processes from departments citywide.

The CSR project kicked off in July 2001. By November, the city had built three servers, installed virus protection and created an installation disk that would work across all platforms.

In December 2001, Dallas added two more servers to handle the Web interface. These would be joined in January by three more servers to handle the mobile application interface and one more in March to handle reporting. Also in December, the deployment team rolled out the system to 825 Windows NT, 98 and 2000 desktops. It was ready for testing Jan. 2, 2002.

Throughout the CSR project's life cycle, "we've kept in mind that this isn't IT's project; it's the user departments' project," Bigelow says. With more than 500 business processes that had to be re-engineered before the city could complete the project, success was predicated on getting buy-in, he says.

As ultimately successful as the implementation has been, Bigelow says he wishes some of the timing had been different. "Motorola had elected to have the city's configuration managers begin setting up the service requests before training them in how the base product worked," he says. When they did get training, they had to rework configurations to take advantage of what they had learned.

"The first full 90% of problems with the system were training issues," he acknowledges. There just wasn't enough time between training and implementation for users to practice, Bigelow says.

The city worked with Motorola for several months to get a viable installation package. The final version wasn't available until almost November 2001, and even then it had a conflict — fixed two months later — with the Windows 2000 platform, he says.

The geodata caused another lag: The Motorola conversion to the street data wasn't complete until the week of implementation. And Bigelow says the disaster recovery testing should have occurred much earlier than the week before implementation.

A Year Later

A year after Dallas' 311 system went live, it's still evolving, says McFarland. The anxiously awaited ESRI interface between the city's GIS and 311 systems has been deployed, virtually eliminating geodata errors.

"Of the 1.1 million 311 calls the city fields annually, about 300,000 are being offloaded onto the interactive voice response system," McFarland says. Citizens find the new system easier to deal with, he says. Requests for service now go directly to those responsible for the service, shortening response times and allowing managers to better allocate resources.

"The key to the success of any 311 system is how fast you can clear up those troubles. Otherwise, it's just a sophisticated record-keeper," says McFarland.

The IT department is now installing wireless LAN access points that will let city workers in the field download code-compliance data.

And the 311 project has provided plenty of lessons for the city's next project — an integrated, citywide enterprise resource management system. ▶

Lais is a Computerworld *contributing writer in Takoma Park, Md.*

BEYOND DALLAS
Learn how other cities are revamping their call centers:
QuickLink 35179
www.computerworld.com

Tracking a 311 Call

Dallas' new citizen-request management system integrates requests to 520 city services processes and lets the city and residents track each request.

Dan McFarland, CIO for the city, explains how it works:

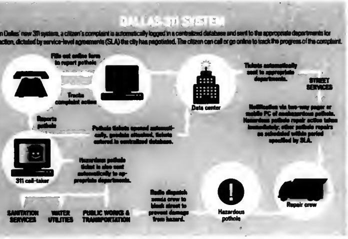
- A citizen needs a service - a pothole repaired, for example. She calls 311 to complain.
- The call-taker brings up the application and enters location and description information on the pothole.
- A geographic information system assigns 11 layers of geodata, such as the street number and the location of the pothole, and that data is stored with the application in the database.
- Differentiation is made between a nuisance pothole and one that presents a safety hazard. Notification goes to the Department of Streets Services and to the department's field supervisor via two-way pager, which syncs with the central data center database every half-hour.
- If the pothole is a safety hazard and the street needs to be closed for repairs, the call-taker can tell the caller about the closing and notify the field supervisor via radio dispatch.
- The system automatically notifies departments that will be affected. sanitation, for example, might have to reroute trash pickups.
- The city has service-level agreements (SLA) for when repairs will be done, and the new system enables the call-taker to tell the caller when the pothole is likely to be fixed. If the pothole isn't filled in time, the system escalates the report, notifying management that an SLA has been violated.

The new 311 system, which is integrated citywide and runs on a centralized server, stores information about the pothole in a centralized database, which each city office can access.

One of the advantages of the system is that it tracks citizens' calls centrally, eliminating redundancies. For example, McFarland says, if someone else had called with a question about, say, a water bill and at the end of the call had said he also wanted to report a pothole that needed to be filled, the system would recognize whether this caller's pothole was the same as the one the other caller reported.

With the old system, a second request for the same pothole would be initiated, with no way to tie it to the first request and no way to track the complaints.

– Sami Lais


DALLAS 311 SYSTEM
File out online form to report pothole
Tracks complaint action
Reports pothole
Data center
Tickets automatically sent to appropriate departments.
STREET SERVICES
Notification via two-way pager or mobile PC of nonhazardous pothole. Hazardous pothole repair action taken immediately; other pothole repairs as scheduled within period specified by SLA.
Pothole tickets opened automatically, geodata attached, tickets entered in centralized database.
311 call-taker
Hazardous pothole ticket is also sent automatically to appropriate departments.
SANITATION SERVICES
WATER UTILITIES
PUBLIC WORKS & TRANSPORTATION
Radio dispatch sends crew to block street to prevent damage from hazard.
Hazardous pothole
Repair crew

In Dallas' new 311 system, a citizen's complaint is automatically logged in a centralized database and sent to the appropriate departments for action, dictated by service-level agreements (SLA) the city has negotiated. The citizen can call or go online to track the progress of the complaint.

formidable hurdles. City databases and systems were splintered onto multiple applications and platforms, including some applications running under a homegrown mainframe operating system. Groundwork included converting to OS/390; consolidating the city's tax, court, building inspection and GIS databases onto an Oracle database; and standardizing 520 request processes from departments citywide.

The CSR project kicked off in July 2001. By November, the city had built three servers, installed virus protection and created an installation disk that would work across all platforms.

In December 2001, Dallas added two more servers to handle the Web interface. These would be joined in January by three more servers to handle the mobile application interface and one more in March to handle reporting. Also in December, the deployment team rolled out the system to 825 Windows NT, 98 and 2000 desktops. It was ready for testing Jan. 2, 2002.

Throughout the CSR project's life cycle, "we've kept in mind that this isn't IT's project; it's the user departments' project," Bigelow says. With more than 500 business processes that had to be re-engineered before the city could complete the project, success was predicated on getting buy-in, he says.

As ultimately successful as the implementation has been, Bigelow says he wishes some of the timing had been different. "Motorola had elected to have the city's configuration managers begin setting up the service requests before training them in how the base product worked," he says. When they did get training, they had to rework configurations to take advantage of what they had learned.

"The first full 90% of problems with the system were training issues," he acknowledges. There just wasn't enough time between training and implementation for users to practice, Bigelow says.

The city worked with Motorola for several months to get a viable installation package. The final version wasn't available until almost November 2001, and even then it had a conflict — fixed two months later — with the Windows 2000 platform, he says.

The geodata caused another lag: The Motorola conversion to the street data wasn't complete until the week of implementation. And Bigelow says the disaster recovery testing should have occurred much earlier than the week before implementation.

A Year Later

A year after Dallas' 311 system went live, it's still evolving, says McFarland. The anxiously awaited ESRI interface between the city's GIS and 311 systems has been deployed, virtually eliminating geodata errors.

"Of the 1.1 million 311 calls the city fields annually, about 300,000 are being offloaded onto the interactive voice response system," McFarland says. Citizens find the new system easier to deal with, he says. Requests for service now go directly to those responsible for the service, shortening response times and allowing managers to better allocate resources.

BEYOND DALLAS

Learn how other cities are revamping their call centers

QuickLink 35179
www.computerworld.com

"The key to the success of any 311 system is how fast you can clear up those troubles. Otherwise, it's just a sophisticated record-keeper," says McFarland.

The IT department is now installing wireless LAN access points that will let city workers in the field download code-compliance data.

And the 311 project has provided plenty of lessons for the city's next project — an integrated, citywide enterprise resource management system. ▶

Lais is a Computerworld *contributing writer in Takoma Park, Md.*

Tracking a 311 Call

Dallas' new citizen-request management system integrates requests to 520 city services processes and lets the city and residents track each request.

Dan McFarland, CIO for the city, explains how it works:

A citizen needs a service – a pothole repaired, for example. She calls 311 to complain.

The call-taker brings up the application and enters location and description information on the pothole.

A geographic information system assigns 11 layers of geodata, such as the street number and the location of the pothole, and that data is stored with the application in the database.

Differentiation is made between a nuisance pothole and one that presents a safety hazard. Notification goes to the Department of Streets Services and to the department's field supervisor via two-way pager, which syncs with the central data center database every half-hour.

If the pothole is a safety hazard and the street needs to be closed for repairs, the call-taker can tell the caller about the closing and notify the field supervisor via radio dispatch.

The system automatically notifies departments that will be affected; sanitation, for example, might have to reroute trash pickups.

The city has service-level agreements (SLA) for when repairs will be done, and the new system enables the call-taker to tell the caller when the pothole is likely to be fixed. If the pothole isn't filled in time, the system escalates the report, notifying management that an SLA has been violated.

The new 311 system, which is integrated citywide and runs on a centralized server, stores information about the pothole in a centralized database, which each city office can access.

One of the advantages of the system is that it tracks citizens' calls centrally, eliminating redundancies. For example, McFarland says, if someone else had called with a question about, say, a water bill and at the end of the call had said he also wanted to report a pothole that needed to be filled, the system would recognize whether this caller's pothole was the same as the one the other caller reported.

With the old system, a second request for the same pothole would be initiated, with no way to tie it to the first request and no way to track the complaints.

– *Sami Lais*

.Net Terminal Services Drive Rental System

Enterprise Rent-A-Car's thin-client project will be one of the biggest ever attempted using Microsoft's .Net Terminal Services. By Carol Sliwa

ENTERPRISE RENT-A-CAR CO. is venturing where few, if any, companies have gone before.

The St. Louis-based firm plans to deliver Microsoft Office and internally developed car-rental applications to 5,000 branch locations equipped with Windows CE-based terminals. Those thin-client devices will access the applications through the enhanced Terminal Services features in Microsoft Corp.'s upcoming release of Windows .Net Server 2003.

For more than 10 years, branch employees have rented out cars using 5250 terminals that link back to the company's AS/400 servers in St. Louis. But Enterprise wants to replace the limited-function green screens with a more graphical interface and give its users a more PC-like environment that will support new features and capabilities, says Mark Adams, an assistant vice president of information systems at the company.

Adams says that Enterprise also wants to retain its existing support model for its 5250 terminals because it knows well the effort required to support full-blown PCs. Enterprise settled on Windows CE-based thin clients because it found them easier to manage and configure and considered them more consistent across vendor lines than Unix- and Linux-based devices, says Derik Reiser, director of platform solutions at the company.

The Windows CE terminals launch Microsoft Remote Desktop Protocol (RDP) 5.1 client software and establish sessions either through a LAN to a server in the branch office or through a shared frame-relay circuit to servers at Enterprise's headquarters.

As part of Microsoft's Joint Development Program, Enterprise has been testing Terminal Services at 18 branches that have two-processor servers running locally and at two branches that connect to four-way boxes in St. Louis.

But the ultimate scope of the project is far more ambitious. During the next 24 months, Enterprise plans to roll out Windows .Net Server 2003 to 2,500 of its larger branches and connect the remaining 2,500 to central servers in St. Louis.

The sheer scale will set the Enterprise project apart from the typical Microsoft Terminal Services deployment, according to Mark Margevicius, an analyst at Stamford, Conn.-based Gartner Inc. He says that 250 to 300 clients has been the "magic number" for Terminal Services. Beyond that, most companies have gone to a more scalable product, such as MetaFrame XP from Citrix Systems Inc.

David Friedlander, an analyst at Giga Information Group Inc., says that even though the Windows .Net version of Terminal Server is improved, he still doesn't expect many companies the size of Enterprise to deploy only the Microsoft product. He says others will likely turn to MetaFrame because of its support for a wider range of clients, advanced manageability and security features for remote access.

Enterprise considered MetaFrame as well as several open-source options, but for the lighter needs of its branches, it found the Microsoft Terminal Services approach sufficient, Adams says.

"We believed that running fewer products would make the solution less complicated to support over the long haul," he says. "With the Windows .Net Terminal Services combination, we had fewer pieces and parts to manage."

Plus, .Net Server offers enhancements that Enterprise has found useful. For instance, the new group policy management console lets the company apply policies to a collection of servers. When Enterprise adds a server to the group, the server will inherit the same configuration settings as each of the others in the group, Reiser says.

Policies also can be applied to each user's account at log-on to indicate which data, directories and drives the user can access, he says.

Reiser says he also likes the new session-directory feature, which tracks user connections to specific servers. If a user is disconnected, he is pointed back to the server where the session originated. In the past, he might have reconnected to a different server, possibly losing work, Reiser says.

The MetaFrame Alternative

Citrix's MetaFrame has many capabilities that aren't found in Windows .Net Server, such as built-in load balancing, which directs users to the least busy server.

And Enterprise is familiar with the benefits that third-party products can add to a Windows Terminal Services deployment, because it has delivered enterprise resource planning applications to administrative offices using MetaFrame, Adams notes. But he says Enterprise won't need Citrix's advanced management console, since it won't be running a complex set of applications on its server farm. "Most of our applications will be delivered with browser-type technology," he says.

Support for heterogeneous clients isn't necessary because Enterprise plans to use only Windows clients. And because the clients will connect via a private network, the Terminal Server product won't be relied upon to provide security, Reiser says.

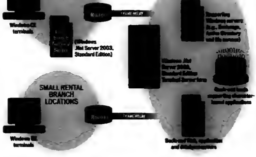
MetaFrame also helps companies that need to do complex application publishing, Reiser says. But since Enterprise is publishing an entire desktop to its Windows CE devices, which run only the Windows CE operating system and the RDP 5.1 client, those features aren't critical.

"In an all-Microsoft environment, with Microsoft clients and servers and no intention of supporting anything else, the Microsoft [Terminal Services] approach is certainly a reasonable one to take," says Dan Kusnetzky, an analyst at Framingham, Mass.-based IDC.

But even in an all-Microsoft environment, there's a need for considerable advance planning. Enterprise, for instance, had to roll out Active Directory in conjunction with the Terminal Services project.

"Don't underestimate the amount of time and effort you need to put into how this component intertwines with the other portions of your architecture," Adams says. ▶

ENTERPRISE RENT-A-CAR is upgrading 5,000 offices from text-mode terminals to Windows CE terminals running .Net Terminal Services. The headquarters Terminal Server farm will support 2,500 branch locations directly and provide fail-over support for another 2,500 larger branches, which will have their own Terminal Server host.


LARGE RENTAL BRANCH LOCATIONS
Windows CE terminals
Router
Frame relay
Branch Terminal Server
(Windows .Net Server 2003, Standard Edition)
CORPORATE DATA CENTER
Supporting Windows servers (e.g., Exchange, Active Directory and file servers)
Windows .Net Server 2003, Standard Edition Terminal Server farm
SMALL RENTAL BRANCH LOCATIONS
Windows CE terminals
Router
Frame relay

Pervasive Computing Gets Organized

Beyond the 20th century: Standards emerge for sharing data across heterogeneous computers and input devices. By Patrick Thibodeau

FORGET MOORE'S LAW The reality is that workstations haven't changed all that much in 30 years, despite their enormous power and performance gains. Interfacing is still a matter of pressing plastic keys and clicking on a mouse.

But imagine, as Vince Stanford does, a time when a camera-equipped PC will be able to follow your gaze and shift applications with your focus. Imagine also that the camera and microphone arrays in conference rooms will recognize you, watch you, listen to you, infer what you want and produce the information that you need, sans keyboard.

"How do we get beyond this 20th century model?" asks Stanford, in his pervasive computing lab at the National Institute of Standards and Technology's (NIST) sprawling campus in Gaithersburg, Md. The computer scientist is creating standards that will enable computers and people to interact, no matter where they are.

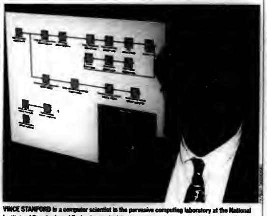
Pervasive computing utilizes "multimodal" interfaces, and that means developing systems that can recognize voice and gestures — systems that perceive their end users. The PC remains important in a pervasive system, and the technology could involve new ways of interfacing with a desktop, such as gaze-tracking.

FUTURE WATCH

But instead of inputting commands in front of one PC exclusively, a pervasive system extends the idea of interfacing to tens or hundreds of devices. It will no longer matter whether end users are in front of their PCs; their connection to information will be available from any device or location. It's a philosophical as well as a technological change.

"You need to shift the focus from one machine, one interface, to one person and one interface made up of many computers," says Stanford.

But there are problems. Although PCs may be "plug and play," pervasive systems are not — yet. Interconnecting a wide variety of technologies that can be mobile or wearable, embedded or stationary, all performing a wide range of functions, can't be accomplished without standards.



VINCE STANFORD is a computer scientist in the pervasive computing laboratory at the National Institute of Standards and Technology, which is connecting cameras, microphones and other sensors to create pervasive devices. The flow chart behind him illustrates some of that work.

NIST is at work on an open-source, pervasive computing standard called Smart Flow to address the underlying problem of connecting a variety of devices, systems and sensors that make up a multimodal environment. This standard is intended to let a company that makes a video, voice or location sensor, for instance, send data from that device in a standard format that could be accessed by an analyzer from another company.

NIST has formed the Pervasive Computing Standards Working Group and has begun recruiting vendors to join the effort. Initially, the focus will be on getting technology companies to join, but business end users will also be asked to participate. "We also try to have companies that are large-scale consumers of the technologies," Stanford says. Creating this standard will be a multiyear project, he notes, partly because the technologies are still emerging.

Stanford says there are a lot of "little pieces" of pervasive computing technology "that can't play together" because of this lack of standards. "We think there is tremendous leverage to be had in these so-called sensor fusions and combinations of different capabilities," he says.

As its name implies, NIST seeks out technologies in need of standards work. NIST sees itself as a neutral third party "that has the broader public good in mind," says Stanford, and its goal is that "all companies should become more capable."

For example, NIST is leading an effort to analyze the Bluetooth wireless protocol so it can interoperate better with 802.11 wireless Ethernet. Bluetooth shares its part of the radio spectrum (2.45 GHz) with 802.11, but the two interfere with each other's signals in that spectrum. Both protocols are considered critical to pervasive computing.

NIST also develops reference data for testing products. For instance, its speech-recognition reference data allows vendors to compare the accuracy of their voice recognition software against a neutral benchmark. The benchmarks consist of annotated voice recordings of varying levels of difficulty.

Vendors agree that NIST has a role to play in developing standards. "Because there are no standards, everyone has to set up their own protocols," says Alex Malison, the CEO of Action Systems Inc., a Silver Spring, Md.-based maker of wireless systems for restaurants. "There is no coherent way for everyone to know what to expect when they are learning something new."

Read My Lips

The practical applications of pervasive systems vary. NIST has set up an array of microphones and cameras that can keep track of what's occurring in a conference room. With sophisticated lip-reading, gaze-tracking and speech-recognition systems, the time may soon come when meeting minutes are automatically recorded and digitized, and participants can issue commands directly to employees from the meeting.

Pervasive systems depend on a lot of technology coming together. For example, Foveal Systems LLC in Madison, N.J., makes automated camera systems that can make videos by sensing the presence of a speaker and the visual aids he's using. Foveal 's owner, Michael Bianchi, say he needs microphone arrays that can look at a 50-seat classroom and figure out the location of a person asking a question. Developing that microphone array and integrating it with Foveal's camera system will take standards, he says.

Stanford says NIST decided to focus on the issue of integration in a pervasive environment because the private sector wasn't doing it. If vendors "can come together and create and find new business opportunities because they have this ability to interact," he says "then we would say we have succeeded, and we would be happy for a few months and then start something else." ▶

MORE FROM NIST

For a look at NIST's work in this area, go online to *www.nist.gov/smartspace/toolChest/nsfs*, and visit our Web site at:

QuickLink a2810
www.computerworld.com

4th Annual
COMPUTERWORLD
PREMIER 100
IT LEADERS
CONFERENCE

February 23-25, 2003
JW Marriott
Desert Ridge Resort
Scottsdale, Arizona

Lead Your Organization to the Real-Time Enterprise!

[illegible] IT [illegible] departments and [illegible] the enterprise? Want [illegible] ideas and strategies with [illegible]? Then attend Computerworld's Premier 100 IT Leaders Conference, the ONLY conference where you can hear from — and network with — Computerworld's Premier 100 IT Leaders.

Who Are the Premier 100?

They're a unique set of award-winning IT executives with valuable lessons [illegible] and advice to offer YOU. They are technologists who understand business needs, take calculated risks and lead through innovation. They are CIOs, vice presidents of IT, directors of IT and business managers honored as Computerworld's Premier 100 from a wide swath of vertical industries. When you attend this unique conference you'll hear proven examples of [illegible] IT Leaders have advanced [illegible] organizations [illegible]

CONFERENCE AGENDA

CONFERENCE CHAIR
Maryfran Johnson
Editor in Chief
Computerworld

CONFERENCE AGENDA

CLIENT SERVICES, T...

The professor of IT is still too ... yet business needs clearly call for ... results. Our field needs to mature more quickly ... pline based on solid ... The ... Group has leveraged the experience ... to develop ... core principles that define great ... field-tested principles, Steve will share his perspective for accelerating the profession and ... sustained value for your organization.

...15pm

...Through Tough Times ...d

...DISTINGUISHED PROFESSOR OF

... reveal themselves more starkly during ... and business professor Warren Bennis ... speech. What do people want from their ... great leaders provide that direction? What are ... companies? Based on illuminating interviews with ... author of such best sellers as "Leaders" and "On ... will delve into the six core leadership competencies ... how IT executives can successfully develop those qualities within ... and their organizations.

...5pm to 5:30pm

Final ... and Conference Summary

... JOHNSON, EDITOR IN CHIEF, COMPUTERWORLD

HOTEL RESERVATIONS

IDG Travel is the official travel company for the Computerworld Premier 100 IT Leaders Conference. They are your one-stop shop for exclusive discounted rates on hotel accommodations.

To reserve a hotel room, please visit
www.premier100.com/show
and check the Housing Reservations page, or visit
www.etcentral.com
You can also call our Conference Housing line at
1-800-340-2262

JW Marriott Desert Ridge Resort
Scottsdale, Arizona

REGISTER TODAY

for Computerworld's Premier 100 IT Leaders Conference

Earlybird Registration (through January 17, 2003)		Full/On-site Registration (after January 17, 2003)
IT End-User:*	$1,495*	$1,795*
Non-Sponsoring Vendor**	$5,000	$5,000

* See IT End-User description on the registration application on reverse.
** See Non-Sponsoring Vendor description on the registration application on reverse.

For more information or to register, visit **www.premier100.com/show** or call 1-800-883-9090.
Or simply complete and fax/mail the registration application on ...

Spam Issue Viewed As IT Security Failure

A surge in e-mail spam undermines user confidence in an otherwise solid security infrastructure. By Vince Tuesday

SECURITY MANAGER'S JOURNAL

THE PROBLEM of unwanted e-mails may not be the biggest security threat my company faces, but it's a highly visible failure to our employees and threatens to taint the IT security group's good reputation.

One of the ways that staffers judge good security is if they can work free of fear. We score pretty well on that measure. Our managers don't fear that our business systems will be compromised or corrupted, our desktop users no longer fear virus infections, and I generally don't fear large security incidents looming on the horizon. Life is good. Apart from spam, that is.

Because many of our staffers work with customers, they often publish their e-mail addresses on our Web site and in our publications. These staffers get flooded with hundreds of rubbish messages along with real customer e-mails.

They get offered radio-controlled cars, free money from Nigeria and, perhaps most bizarrely, septic tanks. That flood is bad enough, but mixed in with all the commercial rubbish are darker-themed messages — come-ons to pornographic Web sites and hate sites, as well as abusive e-mails.

These frontline staffers constantly face high volumes of offensive content, and until recently, we had done little about it.

The problem became bad enough that it presented a risk to our productivity. Staffers were worried by the content, our e-mail systems were spending time on spam rather than on customer e-mails, and the problem affected employees at all levels.

Turning to Blacklists

The first option we looked at was using a blacklist service, which takes spam reports, identifies the servers used and publishes the addresses so that our e-mail server can automatically shun further e-mails from those sources. But spammers move to new servers faster than the blacklist can keep up. Another drawback: Once a company is on the blacklist, its e-mail administrator must jump through hoops to get it removed. Meanwhile, any legitimate e-mail from that company is blocked. Blacklists are useful and have made a dent in spam volumes, but this tool alone wasn't good enough for us.

We ended up going with a more elaborate service from MessageLabs Ltd., a Minneapolis-based service provider we were already using for e-mail traffic virus scans. The company offers a service to label spam using both blacklists and heuristics. As far as I can tell, this means MessageLabs has found a set of features associated with spam, produced a weighting for those features and established a threshold above which something is marked as probable spam.

For example, if an e-mail says, "Make money fast," then it will get a high score as possible spam. But if it comes from a known mailing list, the score will drop.

After testing the service, we found that it was marking 40% of all inbound e-mail as spam — more than 10,000 messages per day. After a month, just 106 e-mails had been incorrectly flagged — a false-alarm rate of less than 0.04%. That was good enough for us, especially since we can tune the rules so that such messages will be delivered the next time.

We later discovered that many of the falsely tagged e-mails were what I would call spam, but they happened to advertise products in which the recipient had an interest. This built our confidence in the service even more.

Some spam still gets through, but the amount is relatively small, and the sources are blocked when reported. And our users don't have to do anything to benefit from the service.

Not to be cynical, but I wonder, How long will it take for users to start thinking that even the greatly reduced level of spam is too much and come back asking for further improvements?

Spam is also a problem outside the office. My personal e-mail address is widely published, thanks to this column, so I get on many lists as well. The Web e-mail company I use, Dublin-based Hush Communications Inc., recently launched a new service called the Human Authenticator. When readers send me an e-mail message, I don't receive it until the sender performs a simple task that only a human could do. If you are a spammer, you won't have the time to carry out this task, so I hope that only individuals will be able to send mail to that account from now on. I'll have to see how it works out — and how readers react to the request.

> **Once a company is on the blacklist, its e-mail administrator must jump through hoops to get it removed. Meanwhile, any legitimate e-mail is blocked.**

Hoop Games

Even if the Human Authenticator works, I have concerns about forcing people who want to communicate with me to jump through hoops. And spammers, who make good money for their efforts, can well afford to get around such mechanisms by finding new ways to distribute commercial messages to potential customers.

I've already seen operating system message windows popping up on cable and Digital Subscriber Line clients with spam text in them. I've also seen Windows Media files that halfway through loading start opening Web sites to display commercial messages. Is this the way spammers will go if control of e-mail spam finally starts to work? ▶

WHAT DO YOU THINK?

This week's journal is written by a real security manager, "Vince Tuesday," whose name and employer have been disguised for obvious reasons. Contact him at vincetuesday@hushmail.com, or join the discussion in our forum.

QuickLink a1590

To find a complete archive of our Security Manager's Journals, go online to:

computerworld.com/secjournal

SECURITY LOG

Security Bookshelf

■ ***The Art of Deception*, by Kevin Mitnick and William L. Simon; John Wiley & Sons, 2002.**

Mitnick, once the world's most reviled hacker, has co-written this book to teach companies how to defend against the threat of social engineering attacks.

Although the author includes best defenses against these threats, his recommendations offer fairly weak protection against social engineering. Nonetheless, I found *The Art of Deception* to be a superb primer.

– Vince Tuesday

NAI Adds Spam Control

Network security vendor Network Associates Inc. (NAI) beefed up its antispam products by acquiring Palo Alto, Calif.-based Deersoft Inc. NAI will use Deersoft's SpamAssassin Pro and Enterprise editions as the basis for its upcoming antispam products.

Santa Clara, Calif.-based NAI will deliver McAfee SpamKiller Enterprise for desktops early in the second quarter, and the company will update its ePolicy Orchestrator to manage SpamKiller Enterprise.

Sourcefire Ships Sensors

Intrusion-detection systems (IDS) vendor Sourcefire Inc. in Columbia, Md., this month begins shipping two IDS network sensors for use in businesses that don't require gigabit-speed intrusion detection. The Sourcefire Network Sensor 1000 appliance, which supports up to 30M bit/sec. speeds, costs $5,000. The Network Sensor 2100, which operates between 250M to 300M bit/sec., costs $13,000.

BRIEFS

LANDesk Updates Management Suite

LANDesk Software Inc. in Salt Lake City today will announce a version of its Management Suite product that provides operating system deployment functionality. The new version provides patented multicasting technology for distributing operating systems to new clients or for updating older ones. Pricing is $75 per node, the company said.

Microsoft Releases Security Package For Servers

Microsoft Corp. last week released Feature Pack 1 for its Internet Security and Acceleration (ISA) Server 2000. The feature pack includes new application-layer firewall defenses and security enhancements for Exchange Server and Internet Information Server, as well as support for RSA Security Inc.'s SecurID two-factor authentication product. ISA Server Feature Pack 1 can be downloaded at Microsoft's Web site at *www.microsoft.com/isaserver/featurepack1/*.

OASIS Launches PKI Initiative

The Organization for the Advancement of Structured Information Standards (OASIS) announced last week the formation of a new technical committee to promote adoption of public-key infrastructure (PKI) technology for Web services and other applications. The Billerica, Mass.-based group plans to put out white papers, implementation guidelines and conformance tests to increase awareness and use of digital certificates. Terry Leahy, a vice president at Wells Fargo & Co., is chairman of the new committee. Vendor supporters include Baltimore Technologies PLC, Computer Associates International Inc., Entrust Inc., Neucom Corp., RSA Security, Sun Microsystems Inc. and VeriSign Inc.

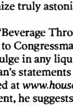
NICHOLAS PETRELEY

Digital Rights Dominate 2002 Awards

GIVEN THE YEAR'S EVENTS, it should come as no surprise that digital rights dominate my 2002 "You Can't Be Serious" awards. These annual awards recognize truly astonishing achievements in IT double-think.

In that spirit, the "Beverage Through the Nose" award for 2002 goes to Congressman Howard Berman.

Be sure not to indulge in any liquid refreshment while reading Berman's statements about peer-to-peer networking published at *www.house.gov/berman*. In one amusing argument, he suggests that companies should be held blameless for breaking into your network to search for copyrighted content. It seems he came up with this theory because people are already given the leeway to trespass on someone's lawn to retrieve a stolen bicycle that's in plain view. To be sure, Richard Nixon's infamous Checkers speech was more inspired, but Berman's works of lunatic reasoning show great promise.



Microsoft ranked a close second in this category, but I have no pity for the poor fool with a mouthful of ginger ale when he heard Bill Gates first utter the words *Trustworthy Computing* last January. After hearing terms like *Zero Administration Windows*, everyone should know by now that it's dangerous to drink anything carbonated during an announcement from Redmond.

Nevertheless, Microsoft does run away with three major awards this year. The first is the "Information at Your Fingertips" award. How many times has this happened to you? You're at a company party shooting the breeze with your boss about the clever plot of a DVD movie you rented and watched yesterday. But when she asks about the name of the movie, your mind goes blank. Until recently, you'd have to wait until 3 a.m. for the name to come back to you.

Now the information can be as close as your cell phone. Every time you use the Windows Media Player to watch a new DVD, it automatically identifies the DVD to a Microsoft server, along with a unique identifier for your personal player.

So the next time you're on the spot for the name of some DVD you watched, give Microsoft a jingle and ask. Someone at the company should know the answer.

Naturally, this convenience will be unavailable to you if you don't use Windows Media Player. Fortunately, Microsoft devised an ingenious plan to prevent you from accidentally using less capable alternatives.

Here's how it works: Along with automatic updates to software and your end-user agreement, Windows XP periodically downloads the information it needs to prevent unapproved media players from accessing DRM-enabled content.

As DRM, or digital rights management, gains momentum and all your other software stops working, Windows Media Player is sure to become the irresistible choice for all your entertainment needs.

This ability to assert remote control over your software earns the company the "Zero Degrees of Separation" award for 2002. Granted, you could miss out on features like this if you don't have a PC, but it's safe to assume that Microsoft has similar plans for the Xbox and that companies such as Disney and Sony are hard at work figuring out how to control your access to copyrighted media on standard players. Better watch out, Microsoft, or one of these other companies could nudge you out of first place in this category next year!

The third award for Microsoft is the coveted "Ignorance Is Bliss" prize for 2002. The fact that sane people still use Windows or Media Player testifies to how well the company has been able to protect its customers from information about what these products are doing without their informed consent.

Finally, Ximian Inc. walks away with "The Mouse That Squeaked" award for continuing to reproduce the .Net development framework as an open-source project called Mono. The value of Mono eludes me, but perhaps there's a secret contingent of open-source programmers itching to write code in Visual Basic .Net.

Nevertheless, only delusions of grandeur could account for the notion that Microsoft won't bankrupt Ximian and stop the project on claims of patent violations the moment Mono poses a threat. ▮

WANT OUR OPINION?

For more columns and links to our archives, go to **www.computerworld.com/opinions**

Spam Issue Viewed As IT Security Failure

A surge in e-mail spam undermines user confidence in an otherwise solid security infrastructure. By Vince Tuesday

SECURITY MANAGER'S JOURNAL

THE PROBLEM of unwanted e-mails may not be the biggest security threat my company faces, but it's a highly visible failure to our employees and threatens to taint the IT security group's good reputation.

One of the ways that staffers judge good security is if they can work free of fear. We score pretty well on that measure. Our managers don't fear that our business systems will be compromised or corrupted, our desktop users no longer fear virus infections, and I generally don't fear large security incidents looming on the horizon. Life is good. Apart from spam, that is.

Because many of our staffers work with customers, they often publish their e-mail addresses on our Web site and in our publications. These staffers get flooded with hundreds of rubbish messages along with real customer e-mails.

They get offered radio-controlled cars, free money from Nigeria and, perhaps most bizarrely, septic tanks. That flood is bad enough, but mixed in with all the commercial rubbish are darker-themed messages — come-ons to pornographic Web sites and hate sites, as well as abusive e-mails.

These frontline staffers constantly face high volumes of offensive content, and until recently, we had done little about it.

The problem became bad enough that it presented a risk to our productivity. Staffers were worried by the content, our e-mail systems were spending time on spam rather than on customer e-mails, and the problem affected employees at all levels.

Turning to Blacklists

The first option we looked at was using a blacklist service, which takes spam reports, identifies the servers used and publishes the addresses so that our e-mail server can automatically shun further e-mails from those sources. But spammers move to new servers faster than the blacklist can keep up. Another drawback: Once a company is on the blacklist, its e-mail administrator must jump through hoops to get it removed. Meanwhile, any legitimate e-mail from that company is blocked. Blacklists are useful and have made a dent in spam volumes, but this tool alone wasn't good enough for us.

We ended up going with a more elaborate service from MessageLabs Ltd., a Minneapolis-based service provider we were already using for e-mail traffic virus scans. The company offers a service to label spam using both blacklists and heuristics. As far as I can tell, this means MessageLabs has found a set of features associated with spam, produced a weighting for those features and established a threshold above which something is marked as probable spam.

For example, if an e-mail says, "Make money fast," then it will get a high score as possible spam. But if it comes from a known mailing list, the score will drop.

After testing the service, we found that it was marking 40% of all inbound e-mail as spam — more than 10,000 messages per day. After a month, just 106 e-mails had been incorrectly flagged — a false-alarm rate of less than 0.04%. That was good enough for us, especially since we can tune the rules so that such messages will be delivered the next time.

We later discovered that many of the falsely tagged e-mails were what I would call spam, but they happened to advertise products in which the recipient had an interest. This built our confidence in the service even more.

Some spam still gets through, but the amount is relatively small, and the sources are blocked when reported. And our users don't have to do anything to benefit from the service.

Not to be cynical, but I wonder. How long will it take for users to start thinking that even the greatly reduced level of spam is too much and come back asking for further improvements?

Spam is also a problem outside the office. My personal e-mail address is widely published, thanks to this column, so I get on many lists as well. The Web e-mail company I use, Dublin-based Hush Communications Inc., recently launched a new service called the Human Authenticator. When readers send me an e-mail message, I don't receive it until the sender performs a simple task that only a human could do. If you are a spammer, you won't have the time to carry out this task, so I hope that only individuals will be able to send mail to that account from now on. I'll have to see how it works out — and how readers react to the request.

> **Once a company is on the blacklist, its e-mail administrator must jump through hoops to get it removed. Meanwhile, any legitimate e-mail is blocked.**

Hoop Games

Even if the Human Authenticator works, I have concerns about forcing people who want to communicate with me to jump through hoops. And spammers, who make good money for their efforts, can well afford to get around such mechanisms by finding new ways to distribute commercial messages to potential customers.

I've already seen operating system message windows popping up on cable and Digital Subscriber Line clients with spam text in them. I've also seen Windows Media files that halfway through loading start opening Web sites to display commercial messages. Is this the way spammers will go if control of e-mail spam finally starts to work? ◾

WHAT DO YOU THINK?

This week's journal is written by a real security manager, "Vince Tuesday," whose name and employer have been disguised for obvious reasons. Contact him at vince.tuesday@hushmail.com, or join the discussion in our forum.

QuickLink a1590

To find a complete archive of our Security Manager's Journals, go online to **computerworld.com/secjournal**

SECURITY LOG

Security Bookshelf

■ ***The Art of Deception*, by Kevin Mitnick and William L. Simon; John Wiley & Sons, 2002.**

Mitnick, once the world's most reviled hacker, has co-written this book to teach companies how to defend against the threat of social engineering attacks.

Although the author includes best defenses against these threats, his recommendations offer fairly weak protection against social engineering. Nonetheless, I found *The Art of Deception* to be a superb primer.

– Vince Tuesday

NAI Adds Spam Control

Network security vendor Network Associates Inc. (NAI) beefed up its antispam products by acquiring Palo Alto, Calif.-based Deersoft Inc. NAI will use Deersoft's SpamAssassin Pro and Enterprise editions as the basis for its upcoming antispam products.

Santa Clara, Calif.-based NAI will deliver McAfee SpamKiller Enterprise for desktops early in the second quarter, and the company will update its ePolicy Orchestrator to manage SpamKiller Enterprise.

Sourcefire Ships Sensors

Intrusion-detection systems (IDS) vendor Sourcefire Inc. in Columbia, Md., this month begins shipping two IDS network sensors for use in businesses that don't require gigabit-speed intrusion detection. The Sourcefire Network Sensor 1000 appliance, which supports up to 30M bit/sec. speeds, costs $5,000. The Network Sensor 2100, which operates between 250M to 300M bit/sec., costs $13,000.

BRIEFS

LANDesk Updates Management Suite

LANDesk Software Inc. in Salt Lake City today will announce a version of its Management Suite product that provides operating system deployment functionality. The new version provides patented multicasting technology for distributing operating systems to new clients or for updating older ones. Pricing is $75 per node, the company said.

Microsoft Releases Security Package For Servers

Microsoft Corp. last week released Feature Pack 1 for its Internet Security and Acceleration (ISA) Server 2000. The feature pack includes new application-layer firewall defenses and security enhancements for Exchange Server and Internet Information Server, as well as support for RSA Security Inc.'s SecurID two-factor authentication product. ISA Server Feature Pack 1 can be downloaded at Microsoft's Web site at *www.microsoft.com/isaserver/featurepack1/*.

OASIS Launches PKI Initiative

The Organization for the Advancement of Structured Information Standards (OASIS) announced last week the formation of a new technical committee to promote adoption of public-key infrastructure (PKI) technology for Web services and other applications. The Billerica, Mass.-based group plans to put out white papers, implementation guidelines and conformance tests to increase awareness and use of digital certificates. Terry Leahy, a vice president at Wells Fargo & Co., is chairman of the new committee. Vendor supporters include Baltimore Technologies PLC, Computer Associates International Inc., Entrust Inc., Neucom Corp., RSA Security, Sun Microsystems Inc. and VeriSign Inc.

NICHOLAS PETRELEY

Digital Rights Dominate 2002 Awards

GIVEN THE YEAR'S EVENTS, it should come as no surprise that digital rights dominate my 2002 "You Can't Be Serious" awards. These annual awards recognize truly astonishing achievements in IT double-think.

In that spirit, the "Beverage Through the Nose" award for 2002 goes to Congressman Howard Berman.

Be sure not to indulge in any liquid refreshment while reading Berman's statements about peer-to-peer networking published at *www.house.gov/berman*. In one amusing argument, he suggests that companies should be held blameless for breaking into your network to search for copyrighted content. It seems he came up with this theory because people are already given the leeway to trespass on someone's lawn to retrieve a stolen bicycle that's in plain view. To be sure, Richard Nixon's infamous Checkers speech was more inspired, but Berman's works of lunatic reasoning show great promise.

NICHOLAS PETRELEY is a computer consultant and author in Asheville, N.C. He can be reached at [illegible].

Microsoft ranked a close second in this category, but I have no pity for the poor fool with a mouthful of ginger ale when he heard Bill Gates first utter the words *Trustworthy Computing* last January. After hearing terms like *Zero Administration* Windows, everyone should know by now that it's dangerous to drink anything carbonated during an announcement from Redmond.

Nevertheless, Microsoft does run away with three major awards this year. The first is the "Information at Your Fingertips" award. How many times has this happened to you? You're at a company party shooting the breeze with your boss about the clever plot of a DVD movie you rented and watched yesterday. But when she asks about the name of the movie, your mind goes blank. Until recently, you'd have to wait until 3 a.m. for the name to come back to you.

Now the information can be as close as your cell phone. Every time you use the Windows Media Player to watch a new DVD, it automatically identifies the DVD to a Microsoft server, along with a unique identifier for your personal player.

So the next time you're on the spot for the name of some DVD you watched, give Microsoft a jingle and ask. Someone at the company should know the answer.

Naturally, this convenience will be unavailable to you if you don't use Windows Media Player. Fortunately, Microsoft devised an ingenious plan to prevent you from accidentally using less capable alternatives.

Here's how it works: Along with automatic updates in software and your end-user agreement, Windows XP periodically downloads the information it needs to prevent unapproved media players from accessing DRM-enabled content.

As DRM, or digital rights management, gains momentum and all your other software stops working, Windows Media Player is sure to become the irresistible choice for all your entertainment needs.

This ability to assert remote control over your software earns the company the "Zero Degrees of Separation" award for 2002. Granted, you could miss out on features like this if you don't have a PC, but it's safe to assume that Microsoft has similar plans for the Xbox and that companies such as Disney and Sony are hard at work figuring out how to control your access to copyrighted media on standard players. Better watch out. Microsoft, or one of these other companies could nudge you out of first place in this category next year!

The third award for Microsoft is the coveted "Ignorance Is Bliss" prize for 2002. The fact that sane people still use Windows or Media Player testifies to how well the company has been able to protect its customers from information about what these products are doing without their informed consent.

Finally, Ximian Inc. walks away with "The Mouse That Squeaked" award for continuing to reproduce the .Net development framework as an open-source project called Mono. The value of Mono eludes me, but perhaps there's a secret contingent of open-source programmers itching to write code in Visual Basic .Net.

Nevertheless, only delusions of grandeur could account for the notion that Microsoft won't bankrupt Ximian and stop the project on claims of patent violations the moment Mono poses a threat. ◗

WANT OUR OPINION?

For more columns and links to our archives, go to **www.computerworld.com/opinions**

QUOTE OF THE WEEK

“Knowledge transfer in the long run isn't going to help consultants get more business. So, make sure it's in the contract upfront as one of the deliverables. This is a good place to separate good consultants from bad ones.”

– Steve Romaine, chief strategist at Hartford Financial, author and former IT consultant. **Page 44**

OPINION

When to Leave Your Calculator in the Drawer

Not all IT investments require ROI and other financial modeling upfront. Sometimes managerial experience and know-how are far more valuable than any calculator, writes columnist John Berry. **Page 45**

High Anxiety

Dread and uncertainty can hurt an IT group. Consultant and author Jeffrey A. Miller tells how to recognize anxiety and what steps you can take to alleviate it. **Page 43**

ISABELLE ARSENAULT/IAGOODSON.COM

BITING BACK

Find and fix 1% of your software bugs, and 90% of your system problems go away, say experts. By Alan S. Horowitz

BUGS ARE SMALL. Usually. Unless, of course, they are of the software kind, in which case they can grow quite large and become hugely expensive to fix. The Sustainable Computing Consortium, a collaboration of major corporate IT users, university researchers and government agencies, estimates that buggy or flawed software cost businesses $175 billion worldwide in 2001. In the U.S., software bugs cost companies nearly $60 billion per year, according to the Commerce Department's National Institute of Standards and Technology (NIST). More important is that one-third of these costs could be eliminated with improved testing that catches errors earlier in the software development process, NIST says.

Smart CIOs are creating comprehensive strategies to test for and fix bugs in both off-the-shelf software and applications created in-house. They know that bugs, like infections, fester the longer they hang around and, as a result, cost more to deal with when left unchecked.

Gartner Inc. analyst Theresa Lanowitz says a software defect left unfixed until late in the development cycle costs 80 to 1,000 times more to fix than it would if it was dealt with earlier. No company is immune to the potential costs of software bugs, which is why a comprehensive plan for dealing with them is critical.

“Bugs are a way of life. You have to accept that,” says Vivek Wadhwa, CEO of Relativity Technologies Inc., a software vendor in Cary, N.C.

“Every piece of software will have bugs in it,” agrees Lanowitz.

Some are more easily recognized than others. For example, CIO Jose Marrero and his team at Agco Corp., a $2.5 billion manufacturer and distributor of agricultural equipment in Duluth, Ga., recently thought they were updating a particular record in a database when, in fact, because of a bug, the software was updating a different field. The cost to analyze and fix the problem: $30,000 to $40,000.

Human Bug Busters

Experts say software quality assurance is as much a people issue as it is a technical one. “If you don't change the way people work, it won't help. To solve quality problems, you have to change what software people do,” says Watts S. Humphrey, a fellow at Carnegie Mellon University's Software Engineering Institute.

The institute trains programmers and engineers to work in self-directed teams and to manage their work. They become owners of their plans and processes and therefore take more responsibility for the quality of their products upfront. As a result, says Humphrey, engineers, who might spend upward of 50% of their time testing software after it's developed, now devote as little as 10% of their time to postdevelopment testing.

Regular communication among software developers and all stakeholders, including users, is also essential. Lanowitz recommends that software

Continued on page 40

BITING BACK

Continued from page 39

development project teams, which should include the development manager, test manager and business champion, meet weekly, with the same participants attending each meeting to ensure that everyone involved knows what progress has been made and what problems have arisen. If bugs are holding back a project, everyone needs to know as early as possible.

This strategy is typically used by commercial software development companies, but not by user companies, says Lanowitz.

FINDING YOUR SWEET SPOT

Here's how to tell it's time to stop testing and deploy new software

QuickLink 35449
www.computerworld.com

Foster Wheeler Inc., a design, engineering and construction services company in Clinton, N.J., has created Web-based software for internal use called Bugtracks. It tracks all information about bugs in real time, including who is working on any given bug, who is ultimately responsible and who the project managers are on both the business and technical sides. Bugtracks, says Foster's corporate IT director, Victor Slaicetti, "allows business users to see what the status of bugs is. It ties the actual developer to the actual business user. The benefit is, you put everybody on the same sheet of music."

But harmony isn't always the result. One reason is that some developers don't like to admit that they are the source of bugs, which is understandable. "Developers like to hide their bugs. They regard them as a weakness or inferiority," says Wadhwa. Observers say this is especially true once the software has gone into production.

To counter this problem, Jonathan Clark, chief technology officer at software tester VeriTest North America in Morrisville, N.C., offers financial incentives to developers who find bugs in other developers' software during the development process — say, $50 to $100 per hit, depending on the severity of the bug. Wadhwa gives similar incentives, plus a party to the team that finds the most bugs by the end of the project. Such incentives motivate developers to find bugs before the software is deployed.

But first, bugs must be defined. "Sometimes the [internal] customer thinks it's a system issue, but about 90% of the time we have bugs reported by customers, it's more a process or data issue," says Art Data, vice president of IT at International Truck and Engine Corp. in Warrenville, Ill.

Defining Your Terms

When someone on the business side can't do what he expected to because of software limitations, he calls it a bug. But the developer usually views this as a change request, because the functionality wasn't initially specified.

For example, IDC analyst Christine Tenneson says she has seen cases in which the software for a database covering multiple regions was designed with selections for only general geographies, such as the Americas, but users wanted to select by country. Users call this a bug; developers call it a change request.

For this reason, Andrei Chivvis, CIO at Converium Reinsurance Inc. in Stamford, Conn., does what might seem obvious: He requires users to sign off when they define their requirements and after they test in terms of performance. This forces users to think upfront about what they want, Chivvis says.

Before he implemented this formal sign-off process, users were involved with software development but frequently didn't think things through to the finished product. It was believed that if changes needed to be made later, that was fine. This tended to shorten the development time but caused more headaches after the software was created. Chivvis is trying to change this problem with his new strategy, which he acknowledges is a difficult culture change. Users need to understand that once the testing begins, specifications don't change.

BOB GRAWIEN of Schneider National tries to find bugs in preproduction.

A debugging strategy must also include the programmers, notes David J. Agans, author of *Debugging: The 9 Indispensable Rules for Finding Even the Most Elusive Software and Hardware Problems* (Amacom Books, 2002). "The assumption is that because they have a degree in engineering, they know how to debug." Not true, Agans says. Developers often approach debugging as puzzle-solving, but it's actually more investigative, a la Sherlock Holmes, he says. So train your developers in debugging.

Dealing With Packaged Bugs

To accommodate the growing number of external users, Bob Grawien, vice president of application development at trucking firm Schneider National Inc. in Green Bay, Wis., implemented a comprehensive testing procedure to be used during the in-house development process. It begins with testing specific features in an isolated environment on a developer's workstation, followed by testing in an isolated system-level environment. Next comes application load testing, scalability testing and, finally, a user acceptance test. All of this is aimed at preventing bugs from making it into production.

When bugs do creep through Schneider's process and are found in production, there's an IT help desk for users to call. If that group can't determine the cause of the problem, it moves up to the next group, whose job is to keep production running. If the bug is still running around unchecked, the development team is brought in. This escalation process lets the development team focus primarily on development, while others deal with bugs first.

Schneider's bug management program has also implemented consistent ways to notify users of problems. For example, if a logistics application has a bug, IT has a list of users it calls to alert them to a problem in production, let them know what the ramifications might be and tell them when to expect the software to be up and running again.

"We tend to view the world as an iron triangle: people, process and technology," notes Grawien. Project managers, for instance, are given well-defined deliverables and responsibilities.

The company recently built isolated systems for a wide range of tests, with the goal of providing consistent quality improvement. And, on the technology side, it has invested in hardware and software, including a Segue Software Inc. tool that simulates multiple users, and a Sitraka Inc. software tool that analyzes software performance. Schneider also provides training on the tools for its development teams.

Menasha Corp., a manufacturer of packaging materials in Neenah, Wis., goes a step further.

"It's not enough [to test] that the software ran to completion. We put a business model against it to validate it will respond in production," says CIO Ed Wojciechowski.

Testers consolidate a number of scripts for business processes, such as processing a sales order to ship a product. They then compare the software against historical trends, which, among other things, indicates how well current software works for the same business processes from a profit-and-loss perspective. It's not enough that the new software works technically; it must perform better than what it's replacing in the real-world production setting, he says.

It's estimated that less than 3% of insects are actually pests in the natural world. VeriTest's Clark says something similar happens with software: "One percent of software bugs tend to cause 90% of the problems. [Fixing] your top 10 bugs would solve so much of your problems."

Software bugs can't be eliminated any more than all the insecticides in the world can eliminate creepy bugs. But experts conclude that if you focus on the peskiest ones, you'll go a long way toward eliminating most of your bug-related headaches. ◗

Horowitz is a freelance business and technology writer in Salt Lake City. Contact him at alan@horowitz.com.

A DEBUGGING PRIMER

Go to our Web site to read an excerpt of David J. Agans new book on developing a debugging strategy

QuickLink 35491
www.computerworld.com

BITING BACK

Continued from page 39

development project teams, which should include the development manager, test manager and business champion, meet weekly, with the same participants attending each meeting to ensure that everyone involved knows what progress has been made and what problems have arisen. If bugs are holding back a project, everyone needs to know as early as possible.

This strategy is typically used by commercial software development companies, but not by user companies, says Lanowitz.

Foster Wheeler Inc., a design, engineering and construction services company in Clinton, N.J., has created Web-based software for internal use called Bugtracks. It tracks all information about bugs in real time, including who is working on any given bug, who is ultimately responsible and who the project managers are on both the business and technical sides. Bugtracks, says Foster's corporate IT director, Victor Slaicetti, "allows business users to see what the status of bugs is. It ties the actual developer to the actual business user. The benefit is, you put everybody on the same sheet of music."

But harmony isn't always the result. One reason is that some developers don't like to admit that they are the source of bugs, which is understandable. "Developers like to hide their bugs. They regard them as a weakness or inferiority," says Wadhwa. Observers say this is especially true once the software has gone into production.

To counter this problem, Jonathan Clark, chief technology officer at software tester VeriTest North America in Morrisville, N.C., offers financial incentives to developers who find bugs in other developers' software during the development process — say, $50 to $100 per hit, depending on the severity of the bug. Wadhwa gives similar incentives, plus a party to the team that finds the most bugs by the end of the project. Such incentives motivate developers to find bugs before the software is deployed.

But first, bugs must be defined "Sometimes the [internal] customer thinks it's a system issue, but about 90% of the time we have bugs reported by customers, it's more a process or data issue," says Art Data, vice president of IT at International Truck and Engine Corp. in Warrenville, Ill.

Defining Your Terms

When someone on the business side can't do what he expected to because of software limitations, he calls it a bug. But the developer usually views this as a change request, because the functionality wasn't initially specified.

For example, IDC analyst Christine Tenneson says she has seen cases in which the software for a database covering multiple regions was designed with selections for only general geographies, such as the Americas, but users wanted to select by country. Users call this a bug; developers call it a change request.

FINDING YOUR SWEET SPOT

Here's how to tell it's time to stop testing and deploy new software:

QuickLink 35449
www.computerworld.com

For this reason, Andrei Chivvis, CIO at Converium Reinsurance Inc. in Stamford, Conn., does what might seem obvious: He requires users to sign off when they define their requirements and after they test in terms of performance. This forces users to think upfront about what they want, Chivvis says.

Before he implemented this formal sign-off process, users were involved with software development but frequently didn't think things through to the finished product. It was believed that if changes needed to be made later, that was fine. This tended to shorten the development time but caused more headaches after the software was created. Chivvis is trying to change this problem with his new strategy, which he acknowledges is a difficult culture change. Users need to understand that once the testing begins, specifications don't change.

A debugging strategy must also include the programmers, notes David J. Agans, author of *Debugging: The 9 Indispensable Rules for Finding Even the Most Elusive Software and Hardware Problems* (Amacom Books, 2002). "The assumption is that because they have a degree in engineering, they know how to debug." Not true, Agans says. Developers often approach debugging as puzzle-solving, but it's actually more investigative, a la Sherlock Holmes, he says. So train your developers in debugging.

Dealing With Packaged Bugs

[illegible]

To accommodate the growing number of external users, Bob Grawien, vice president of application development at trucking firm Schneider National Inc. in Green Bay, Wis., implemented a comprehensive testing procedure to be used during the in-house development process. It begins with testing specific features in an isolated environment on a developer's workstation, followed by testing in an isolated system-level environment. Next comes application load testing, scalability testing and, finally, a user acceptance test. All of this is aimed at preventing bugs from making it into production.

When bugs do creep through Schneider's process and are found in production, there's an IT help desk for users to call. If that group can't determine the cause of the problem, it moves up to the next group, whose job is to keep production running. If the bug is still running around unchecked, the development team is brought in. This escalation process lets the development team focus primarily on development, while others deal with bugs first.

Schneider's bug management program has also implemented consistent ways to notify users of problems. For example, if a logistics application has a bug, IT has a list of users it calls to alert them to a problem in production, let them know what the ramifications might be and tell them when to expect the software to be up and running again.

"We tend to view the world as an iron triangle: people, process and technology," notes Grawien. Project managers, for instance, are given well-defined deliverables and responsibilities.

The company recently built isolated systems for a wide range of tests, with the goal of providing consistent quality improvement. And, on the technology side, it has invested in hardware and software, including a Segue Software Inc. tool that simulates multiple users, and a Sitraka Inc. software tool that analyzes software performance. Schneider also provides training on the tools for its development teams.

Menasha Corp., a manufacturer of packaging materials in Neenah, Wis., goes a step further.

"It's not enough [to test] that the software ran to completion. We put a business model against it to validate it will respond in production," says CIO Ed Wojciechowski.

Testers consolidate a number of scripts for business processes, such as processing a sales order to ship a product. They then compare the software against historical trends, which, among other things, indicates how well current software works for the same business processes from a profit-and-loss perspective. It's not enough that the new software works technically; it must perform better than what it's replacing in the real-world production setting, he says.

It's estimated that less than 3% of insects are actually pests in the natural world. VeriTest's Clark says something similar happens with software: "One percent of software bugs tend to cause 90% of the problems. [Fixing] your top 10 bugs would solve so much of your problems."

Software bugs can't be eliminated any more than all the insecticides in the world can eliminate creepy bugs, But experts conclude that if you focus on the peskiest ones, you'll go a long way toward eliminating most of your bug-related headaches. ◗

Horowitz is a freelance business and technology writer in Salt Lake City. Contact him at alan@horowitz.com.

A DEBUGGING PRIMER

Go to our Web site to read an excerpt of David J. Agans' new book on developing a debugging strategy

QuickLink 35491
www.computerworld.com

When The Plug Gets Pulled

How to survive and maybe even thrive in the wake of a canceled IT project.

By Minda Zetlin

CAREERS

IN A PREVIOUS JOB at a large refining company, IT director Bob Ghirlanda spent a year putting together a plan to install a computerized maintenance management system. With the system specifications and ROI analysis in place, Ghirlanda went to work implementing the project. Then things started to go wrong.

Executives had selected software that seemed to fit their corporate goals, but it wasn't the right software for the company's technology needs. Faced with growing concerns, the company's CIO decided to cancel the project, and Ghirlanda agreed with this decision. "We could not assure corporate leadership that the project would be a success," he says.

In these days of economic uncertainty, canceled projects are a fact of life. Although it's never a pleasant experience, it doesn't have to be a debilitating career setback for an IT project manager. The key is how you handle the cancellation. Here's some advice from those who have been there on how to survive after the plug is pulled.

■ **Don't take it personally.** "Most of the time, it's not that the team was doing things badly," says Jeff Chasney, CIO at $3 billion CKE Restaurants Inc. in Santa Barbara, Calif. Chasney characterizes himself as a "turnaround CIO" who is often hired to make changes in troubled IT organizations. He says he has canceled at least 12 major projects in the past few years — including the one Ghirlanda was working on. "Better than 50% were because the company was changing direction," he notes. "In other cases, it was the right project at the wrong time, or it didn't match the organization's culture."

■ **Treat it as a completion.** Do the things you would after a successful completion. "It's really important that the project manager does the regular closeout activities," says Karen White, director of resource management at Project Management Solutions Inc., a consulting, training and research company in Havertown, Pa. As both a consultant and an internal project manager, she has been through several project cancellations in her career.

JEFF CHASNEY of CKE Restaurants says most canceled IT projects are the result of organizational changes, not staff failures.

"Close the files in an orderly way, do the team awards and lessons learned," White says. "You need to recognize that there's a grief period and help the team through it — and still have the ending celebration to say, 'We took our best shot.' This is important for team morale."

■ **Make sure the team isn't blamed.** "Both the project manager and the project's business sponsor need to make sure the team is not labeled as a failure," White says. For instance, a major project White was working on at a financial services company was canceled when the firm was acquired.

"We made sure the team got awards and recognition and bonuses," she says. "It wasn't their fault the corporation was sold."

■ **Keep your eye out for the next project.** "A project can always be canceled, so it's important to keep networking," Ghirlanda says. White advises project managers to keep their skills and certifications current. "Don't always have lunch with your project team — eat with other folks from your company as well," she counsels. In effect, White says, "you're always interviewing."

■ **Learn from it.** "I look for whether people have learned the lessons of a canceled project," Chasney says. For instance, he says, if a project was canceled because of spiraling expenses, "I expect to see far more diligence and for them to be watching the budget numbers more closely."

In some cases, the company and the project manager are simply a bad fit. That's the conclusion Ghirlanda reached after his maintenance project was one of a whole suite canceled by the refining company. About a year later, he began looking for other opportunities, and he's now a reliability systems planning manager at Eastman Kodak Co. Of his old firm, Ghirlanda says, "It became clear they weren't going to invest the resources in IT projects." ▶

Zetlin (minda@mindazetlin.com) is a writer in Woodstock, N.Y. Her latest book is Telecommuting for Dummies *(Hungry Minds, 2001).*

Cancellation As a Career Plus

A few years ago, Karen White was principal information systems analyst at now-defunct Wang Laboratories Inc. She and her team built a large data repository for the company's hardware sales segment.

The project was a high-profile success, and the maintenance department requested that White's team do the same for it. But after a feasibility study, the team concluded that the department's reporting was incompatible with the system it wanted.

So White sat down with the project's business sponsor and explained why it wouldn't work. "A lot of angst comes into play when you do that," she says. "I thought, 'I just shot down my own project. Now I don't have a project to manage.' "

The business manager, however, was impressed with her willingness to state an unpopular truth. He became a valuable advocate for her within the corporation. "There were other instances when I needed his political support, and he was always there," she says.

Jeff Chasney, CIO at CKE Restaurants, confirms that a project manager who volunteers to cancel a project that's in trouble can gain respect from top managers. "It's a real career enhancement when someone can forecast out and see that a project won't work," he says.

"Don't be afraid to recommend a cancellation," White says. "After all, it's much better to cancel something than to complete it – and then have it sit on a shelf."

– Minda Zetlin

BELLE MELLOR

High Anxiety

Dread and uncertainty can hurt an IT group. What to do? By Kathleen Melymuka

AN IT MANAGER and a programmer at a large Eastern frozen food company were locked in mortal combat. "Bob," the programmer, was working 60- to 80-hour weeks for "Larry," his manager. But Bob thought that Larry didn't appreciate his efforts and that he often threw back perfectly good code as unacceptable. Bob was so distraught that he was literally hiding from Larry.

Larry was equally annoyed at Bob, whose work he considered substandard. He wanted Bob out, but he knew that if he fired him, the IT department would miss a critical deadline.

When organizational consultant Jeffrey A. Miller was brought in, he found that the problem was neither Bob nor Larry; it was the anxious atmosphere of the organization where they worked.

A little anxiety can be a good thing, as when keen competition forces companies to work smarter. But when organizational anxiety rises and isn't handled well — when employees begin to blow up or hide out — productivity can suffer in unpredictable ways.

The root of Larry's and Bob's anxiety was that their company had just made a huge acquisition, and the IT group had been charged with integrating the two information systems within a time frame that seemed impossible to them. To make matters worse, Larry's boss, "Ted," was playing out his own stress by micromanaging, adding to the tension. And his "overfunctioning" was affecting people's performances by leading them to "underfunction," according to Miller.

If this scenario seems familiar, you may be working in an anxious organization, and you may not be aware of it, says Miller, author of *The Anxious Organization: Why Smart Companies Do Dumb Things* (Facts on Demand Press, 2002). Organizational anxiety can result from inappropriate, unarticulated or conflicting goals, time pressure, bad leadership, mixed messages and the helpless feeling that you're damned if you do and damned if you don't.

Often, people like Bob and Larry deflect attention from the real problems, such as time pressure and poor leadership. "People think: 'Fix them, and we fix the problem,' " Miller says. "But they may not have identified the problems. This is very common in IT."

"I see this type of anxiety in every shop I go to," says Tom Murphy, CIO at Royal Caribbean Cruises Ltd. in Miami.

"I've seen cultures where interpersonal clashes were considered good for the organization," says Ed Bell, CIO at Commonwealth Financial Network in Waltham, Mass. "Feuding and finger-pointing are offshoots of these interpersonal clashes. The net result was projects took longer or never got started, turnover was high, and people were hesitant to make decisions or take risks."

The more people focus on these symptoms, the more anxious they become and the less able they are to see, let alone solve, the real problems, Miller says.

Organizational anxiety can also affect the business in subtle but equally destructive ways. "In the face of consistent and acute anxiety, people really pull inward," says Miller, who is also president of Jeffrey A. Miller & Associates in Chicago. "They're not likely to be very creative or flexible or to make decisions other than the same ones that have always been made. No one wants to break stride from the pack when anxiety is high." This leads to "group think," which keeps individuals from challenging bad ideas.

Because change can breed anxiety, IT is prone to it, Miller says. But IT people can also alleviate anxiety if they think of the organization as a system. "This isn't psychology; it's systems," Miller says. "Change the program a little, and you might get it to run."

Miller suggests that IT managers start with their own relationships. "Deal with each person directly, not through someone else," he says.

Meanwhile, look for an opportunity to change something for the better. "It's just like writing code or plotting a system," he says. "Once one part of a system changes, the whole system is de facto different."

"IT professionals are responsible for change within the organization," says Virginia Robbins, IT director at Chela Financial Cos. in San Francisco. "IT drives change. Our behaviors drive the culture and thus influence and change the culture every day. We are either part of the company's positive culture, or we're the problem."

Anxiety and calm are contagious, Miller says. If you can calm down the system, people will loosen up and begin to address the real problems.

That's what happened with Bob, Larry and Ted. Miller helped Bob notice that the more detail he added to his work, the less Larry complained. Because Bob didn't need to redo his work, he went home earlier. He and Larry began to work out a better relationship. Ted stopped micromanaging and let his staff take charge. All three found that as they stopped feeding their anxiety, they had much more energy to do the work. The bottom line: They got the project done on time. ◗

Melymuka is a Computerworld *contributing writer. Contact her at kmelymuka@earthlink.net.*

ARE YOU FULLY FUNCTIONAL?

To find out, go online and read this book excerpt from Jeffrey A. Miller's *The Anxious Organization*:

QuickLink 35439
www.computerworld.com

How High Is Too High?

If your answer to most of the following questions is yes, the anxiety level in your IT department is probably too high:

- Do people take sides with others instead of taking stands on issues?
- Do workgroups tend to come to rapid agreement, with very little discussion or dissent?
- Do the same individuals tend to be blamed consistently for problems?
- Are people quitting due to stress or dissatisfaction with the company?
- When problems arise, are people urged to show more "team spirit"?
- Is "improved communication" considered the solution to all conflicts?
- Do leaders send conflicting instructions and mixed messages?

Coming In From the Cold

Steve Romaine, *chief strategist in the technology group at Hartford Financial in Hartford, Conn., is a former IT consultant and author of* Soldier of Fortune 500: A Management Survival Guide for the Consulting Wars *(Prometheus Books, 2002). In his book, he candidly chronicles his experiences as a highly paid IT consultant for IBM, Bank of America Corp., Chase Manhattan Bank Corp. and other large U.S. companies.*

Unlike other professions, there is no licensing requirement for consultants, Romaine points out. Anyone can do it. And they do, which he says contributes to a culture where politics rule and the most important objective in any consulting contract is to secure the next contract. Romaine says he wrote the book "to provide guidance in recognizing potential abuses and avoiding them in the future." He recently talked with Computerworld*'s Julia King.*

You've been on both sides of the fence. Where would you say problems first surface? What are the early warning signs of potential abuse? What often happens is a consultant comes in and says, "We have a game plan we used before. It's a best practice. Get someone out of your business unit to be the project sponsor and head that up." Consulting firms say they need a high-level sponsor [at the client company] because it's important to make sure the business unit buys in. But the problem is that the client company is often getting such a senior-level executive that they're not there to run the project on a day-to-day basis. Senior executives don't understand the technology, but they don't want to appear not to understand, so it creates a dependency on the consultant. That's a huge issue.

You raise an interesting issue about best practices. Consulting firms like to tout their vertical industry expertise. But what value is it to Company B to have a consulting firm deploy the same systems and processes it deployed for Company A, especially if they're in the same industry? If it's something that's a core competency of your business, something you're hoping will give you a competitive advantage, don't bring in consultants who will learn on the job [and] then go across the street and work for the next guy. You have to be careful not to train the workforce of your competitor. Sometimes, best practices make a lot of sense if you can gain competitive information, but you have to put parameters around it to make sure you're not becoming a me-too operation.

If a company can identify core competencies to provide competitive advantage, that's not the place to bring in a vertical best-practices consulting firm who's going around to all of your competitors. On the other hand, it might be the thing to do if you're trying to figure out what your competitors are doing.

Consultants bill by the hour, which can get extraordinarily expensive for companies. Any tips for keeping a lid on their hours? Consultants get caught up in "analysis paralysis" because they're trying to bill out as much as they can. It makes sense for companies to define their [project] requirements before they hire an outside consultant or to divide up the work, because there's a conflict of interest if you hire the same consulting firm to do both [the requirements planning and the implementation]. For example, you're not going to see a firm with PeopleSoft consultants on their bench recommend SAP.

You write that many companies make the mistake of bringing in consultants to solve political infighting. Why doesn't this work? With businesses operating so much tighter today and people trying to reduce costs, a lot of companies are getting back to alignment between business and IT. There's still a lot of infighting in some companies, and there are turf wars. Consultants come in and play one group off another.

Here's a perfect example: A company's objective is to eliminate its data silos that were created by different business units all using different applications. The business model of some consulting firms is to have a consulting partner responsible for different parts of the [client company's] business. At NationsBank [now part of Bank of America], we had a consulting partner responsible for check processing and another partner for electronic payments. They were competing for the same business, and they had no incentive to eliminate the silos. One guy was there to get the check-processing business, and the other guy wanted the electronic payments business.

Consulting companies often promise to train a client's IT workers so they can maintain systems once the outsiders leave. How can a company ensure that this actually happens? Technical complexity is a best friend for some consultants. Knowledge transfer in the long run isn't going to help consultants get more business. So make sure it's in the contract upfront as one of the deliverables. This is a good place to separate good consultants from bad ones. ▶

REELING 'EM IN

Author Steve Romain describes his tactics for acquiring CIO clients at big-name companies.

QuickLink 35450
www.computerworld.com

Tips for Managing Consultants

- Don't use consultants to broker vendor deals.
- Thoroughly check the backgrounds, credentials and references of consultants.
- Never shift management decisions to consultants.
- Make skills transfer and training required components of getting paid.
- Pay for consultants to fly coach class only. It forces them to mix with real people.

SOURCE: SOLDIER OF FORTUNE 500: A MANAGEMENT SURVIVAL GUIDE FOR THE CONSULTING WARS

OUTLOOK

Gartner's View for IT Pros in 2003

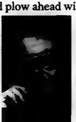
IT professionals should take time in 2003 to enhance their perceived value and better understand business priorities, Stamford, Conn.-based Gartner Inc. advises. Here are eight guidelines to consider:

- **Take inventory of your technology and business knowledge. Be honest about bare spots, and expand your knowledge.**
- **Get smart about the key drivers of your company's business. Network with business counterparts to discuss their financial and operational objectives. Become the business-knowledge liaison to your IT team.**
- **Identify required services. By understanding your business, you will be able to identify and implement services that will help drive your company's success. *Integration, process insight* and *versatility* will be watchwords.**
- **Become an evergreen professional. Pursue emerging and enduring knowledge, competencies and experiences.**
- **Seek leadership opportunities and accountability. This isn't the year to lay low. Mergers and acquisitions, consolidation and globalization will increase the number of projects and internal initiatives. Step up to the plate.**
- **Strengthen your knowledge of business principles. There are dozens of ways to gain business acumen: accounting, communications, financial analysis, marketing, cost management and so on. Additional business know-how will enhance your career and increase your credibility in the business units within your company.**
- **Get connected. Network with project leaders and champions. Careers are built on both what you know and on who you know.**
- **Find new value in prior IT investments. Revisit the applications and technologies that have been deployed and reapply functions and features to new processes. Your success will depend on your newfound knowledge of business processes, customer markets and financial goals.**

JOHN BERRY

Calculating From Experience

AS 2003 UNFOLDS, a fantastic tale will emerge in which a wise manager, after witnessing a software sales presentation, will see so clearly the profound impact the proposed technology can have on the business that the organization will dispense with economic modeling and plow ahead with the investment.



Rare? Yes. Radical? Maybe. Yet perhaps you'll be the revolutionary who gets to defy conventional wisdom.

Remember, one of the primary goals of modeling the economic impact of IT is to help managers decide if and when to make a calculated bet on a technology. I argued in my first *Computerworld* column [July 22, 2002; QuickLink 31362] that many types of IT investments defy financial measurement; these technologies enable the execution of more strategic business activity. Since IT is woven into the fabric of business operation, these necessary IT investments are required if more strategic kinds of investments are to be made. Examples of necessary technology investments include data warehousing, connectivity, middleware and storage. Without them, strategic investments in CRM, supply chain, procurement and product collaboration are impossible.

You can model and debate the economic returns of a storage-area network (SAN) until Judgment Day. Fact is, a SAN might be a prerequisite for an ambitious supply chain project under discussion.

Alternatively, managers are advised, hectored and warned to financially model risky strategic investments as a precept in sound management and as a vaccination against economic and career doom. Proper modeling, the argument goes, reveals the novelty in many kinds of software. This is because the software demands that companies begin conducting activities differently. Doing business differently means risk, and risk demands accurate quantification of costs and benefits before the investment is made.

As it happens, the economic potential of that risky strategic technology might hit you so hard between the eyes that a fully loaded business case becomes irrelevant — if not a waste of time.

Consider this example — no, fairy tale. A computer-aided design (CAD) software vendor was pitched a sales-lead management application as a means to automate its relationships with its resellers. The business benefits blared out to the chief operating officer of the CAD software company. To him, the economic justification was obvious. So, he decided, why bother formulating a financial business case?

The CAD vendor's resellers were lax in communicating with the company. They failed to confirm receipt of new leads or update the vendor on the status of a lead as it evolved in the sales cycle. By implementing a rules engine in the lead management application, the vendor changed the resellers' behavior by forcing them to update the company on the status of all leads before receiving new leads. And we all know a lead is the salesperson's crack hit.

Another benefit the vendor recognized was the acceleration of leads into the sales pipeline. Historically, leads were collected, dropped into a spreadsheet and shipped off weekly to the resellers. When leads are plugged into the software sooner after capture, resellers act upon them more quickly.

Had the vendor's COO bothered with a business case, he would have found the metrics for justifying the expenditure to be straightforward enough: improved cash flow from a compressed sales cycle, increased sales from action taken more quickly on newly captured leads and improved marketing effectiveness arising out of much-improved reseller feedback about leads in the pipeline. The vendor can now track marketing more directly with the performance of any lead it generates and refine those efforts accordingly.

The moral of this story is not that measurement isn't important. It is, rather, that managerial experience and know-how have certain advantages; a lesser COO sitting in on the CRM application sales pitch wouldn't have recognized the creative way in which this application could be used to boost the company's competitive position. The moral is also that the success of IT projects is as much about the quality of people as it is about the rigor of ROI models. You might get your chance to prove it in 2003. ▶

WANT OUR OPINION?

For more columns and links to our archives, go to: **www.computerworld.com/opinions**

Coming In From the Cold

Current job: [illegible]

Previous positions: [illegible]

Home: [illegible]

Most recent book: [illegible]

Q&A

Steve Romaine, *chief strategist in the technology group at Hartford Financial in Hartford, Conn., is a former IT consultant and author of* Soldier of Fortune 500: A Management Survival Guide for the Consulting Wars *(Prometheus Books, 2002). In his book, he candidly chronicles his experiences as a highly paid IT consultant for IBM, Bank of Americo Corp., Chase Manhattan Bank Corp. and other large U.S. companies.*

Unlike other professions, there is no licensing requirement for consultants, Romaine points out. Anyone can do it. And they do, which he says contributes to a culture where politics rule and the most important objective in any consulting contract is to secure the next contract. Romaine says he wrote the book "to provide guidance in recognizing potential abuses and avoiding them in the future." He recently talked with Computerworld's *Julia King.*

You've been on both sides of the fence. Where would you say problems first surface? What are the early warning signs of potential abuse? What often happens is a consultant comes in and says, "We have a game plan we used before. It's a best practice. Get someone out of your business unit to be the project sponsor and head that up." Consulting firms say they need a high-level sponsor [at the client company] because it's important to make sure the business unit buys in. But the problem is that the client company is often getting such a senior-level executive that they're not there to run the project on a day-to-day basis. Senior executives don't understand the technology, but they don't want to appear not to understand, so it creates a dependency on the consultant. That's a huge issue.

You raise an interesting issue about best practices. Consulting firms like to tout their vertical industry expertise. But what value is it to Company B to have a consulting firm deploy the same systems and processes it deployed for Company A, especially if they're in the same industry? If it's something that's a core competency of your business, something you're hoping will give you a competitive advantage, don't bring in consultants who will learn on the job [and] then go across the street and work for the next guy. You have to be careful not to train the workforce of your competitor. Sometimes, best practices make a lot of sense if you can gain competitive information, but you have to put parameters around it to make sure you're not becoming a me-too operation.

If a company can identify core competencies to provide competitive advantage, that's not the place to bring in a vertical best-practices consulting firm who's going around to all of your competitors. On the other hand, it might be the thing to do if you're trying to figure out what your competitors are doing.

Consultants bill by the hour, which can get extraordinarily expensive for companies. Any tips for keeping a lid on their hours? Consultants get caught up in "analysis paralysis" because they're trying to bill out as much as they can. It makes sense for companies to define their [project] requirements before they hire an outside consultant or to divide up the work, because there's a conflict of interest if you hire the same consulting firm to do both [the requirements planning and the implementation]. For example, you're not going to see a firm with PeopleSoft consultants on their bench recommend SAP.

You write that many companies make the mistake of bringing in consultants to solve political infighting. Why doesn't this work? With businesses operating so much tighter today and people trying to reduce costs, a lot of companies are getting back to alignment between business and IT. There's still a lot of infighting in some companies, and there are turf wars. Consultants come in and play one group off another.

Here's a perfect example: A company's objective is to eliminate its data silos that were created by different business units all using different applications. The business model of some consulting firms is to have a consulting partner responsible for different parts of the [client company's] business. At NationsBank [now part of Bank of America], we had a consulting partner responsible for check processing and another partner for electronic payments. They were competing for the same business, and they had no incentive to eliminate the silos. One guy was there to get the check-processing business, and the other guy wanted the electronic payments business.

Consulting companies often promise to train a client's IT workers so they can maintain systems once the outsiders leave. How can a company ensure that this actually happens? Technical complexity is a best friend for some consultants. Knowledge transfer in the long run isn't going to help consultants get more business. So make sure it's in the contract upfront as one of the deliverables. This is a good place to separate good consultants from bad ones. ▮

REELING 'EM IN

Author Steve Romain describes his tactics for acquiring CIO clients at big-name companies

QuickLink 35450
www.computerworld.com

Tips for Managing Consultants

① **Don't use consultants to broker vendor deals.**

② **Thoroughly check the backgrounds, credentials and references of consultants.**

③ **Never shift management decisions to consultants.**

④ **Make skills transfer and training required components of getting paid.**

⑤ **Pay for consultants to fly coach class only. It forces them to mix with real people.**

SOURCE: SOLDIER OF FORTUNE 500: A MANAGEMENT SURVIVAL GUIDE FOR THE CONSULTING WARS

OUTLOOK

Gartner's View for IT Pros in 2003

IT professionals should take time in 2003 to enhance their perceived value and better understand business priorities, Stamford, Conn.-based Gartner Inc. advises. Here are eight guidelines to consider:

- **Take inventory of your technology and business knowledge. Be honest about bare spots, and expand your knowledge.**
- **Get smart about the key drivers of your company's business. Network with business counterparts to discuss their financial and operational objectives. Become the business-knowledge liaison to your IT team.**
- **Identify required services. By understanding your business, you will be able to identify and implement services that will help drive your company's success. *Integration, process insight* and *versatility* will be watchwords.**
- **Become an evergreen professional. Pursue emerging and enduring knowledge, competencies and experiences.**
- **Seek leadership opportunities and accountability. This isn't the year to lay low. Mergers and acquisitions, consolidation and globalization will increase the number of projects and internal initiatives. Step up to the plate.**
- **Strengthen your knowledge of business principles. There are dozens of ways to gain business acumen: accounting, communications, financial analysis, marketing, cost management and so on. Additional business know-how will enhance your career and increase your credibility in the business units within your company.**
- **Get connected. Network with project leaders and champions. Careers are built on both what you know and on who you know.**
- **Find new value in prior IT investments. Revisit the applications and technologies that have been deployed and reapply functions and features to new processes. Your success will depend on your newfound knowledge of business processes, customer markets and financial goals.**

JOHN BERRY

Calculating From Experience

AS 2003 UNFOLDS, a fantastic tale will emerge in which a wise manager, after witnessing a software sales presentation, will see so clearly the profound impact the proposed technology can have on the business that the organization will dispense with economic modeling and plow ahead with the investment.

Rare? Yes. Radical? Maybe. Yet perhaps you'll be the revolutionary who gets to defy conventional wisdom.

Remember, one of the primary goals of modeling the economic impact of IT is to help managers decide if and when to make a calculated bet on a technology. I argued in my first *Computerworld* column [July 22, 2002; QuickLink 31362] that many types of IT investments defy financial measurement; these technologies enable the execution of more strategic business activity. Since IT is woven into the fabric of business operation, these necessary IT investments are required if more strategic kinds of investments are to be made. Examples of necessary technology investments include data warehousing, connectivity, middleware and storage. Without them, strategic investments in CRM, supply chain, procurement and product collaboration are impossible.

You can model and debate the economic returns of a storage-area network (SAN) until Judgment Day. Fact is, a SAN might be a prerequisite for an ambitious supply chain project under discussion.

Alternatively, managers are advised, hectored and warned to financially model risky strategic investments as a precept in sound management and as a vaccination against economic and career doom. Proper modeling, the argument goes, reveals the novelty in many kinds of software. This is because the software demands that companies begin conducting activities differently. Doing business differently means risk, and risk demands accurate quantification of costs and benefits before the investment is made.

As it happens, the economic potential of that risky strategic technology might hit you so hard between the eyes that a fully loaded business case becomes irrelevant — if not a waste of time.

Consider this example — no, fairy tale. A computer-aided design (CAD) software vendor was pitched a sales-lead management application as a means to automate its relationships with its resellers. The business benefits blared out to the chief operating officer of the CAD software company. To him, the economic justification was obvious. So, he decided, why bother formulating a financial business case?

The CAD vendor's resellers were lax in communicating with the company. They failed to confirm receipt of new leads or update the vendor on the status of a lead as it evolved in the sales cycle. By implementing a rules engine in the lead management application, the vendor changed the resellers' behavior by forcing them to update the company on the status of all leads before receiving new leads. And we all know a lead is the salesperson's crack hit.

Another benefit the vendor recognized was the acceleration of leads into the sales pipeline. Historically, leads were collected, dropped into a spreadsheet and shipped off weekly to the resellers. When leads are plugged into the software sooner after capture, resellers act upon them more quickly.

Had the vendor's COO bothered with a business case, he would have found the metrics for justifying the expenditure to be straightforward enough: improved cash flow from a compressed sales cycle, increased sales from action taken more quickly on newly captured leads and improved marketing effectiveness arising out of much-improved reseller feedback about leads in the pipeline. The vendor can now track marketing more directly with the performance of any lead it generates and refine those efforts accordingly.

The moral of this story is not that measurement isn't important. It is, rather, that managerial experience and know-how have certain advantages; a lesser COO sitting in on the CRM application sales pitch wouldn't have recognized the creative way in which this application could be used to boost the company's competitive position. The moral is also that the success of IT projects is as much about the quality of people as it is about the rigor of ROI models. You might get your chance to prove it in 2003. ▶

WANT OUR OPINION?

For more columns and links to our archives, go to **www.computerworld.com/opinions**

HCL

HCL TECHNOLOGIES AMERICA, INC.

HCL Technologies America, Inc. and its affiliate companies like HCL Enterprise Solutions and HCL Technologies (Mass.) Inc have multiple openings at its offices in Sunnyvale, CA, Stamford CT, Plano TX, Florham NJ, Irvine CA, Vienna, VA, Boston, MA, Chicago, IL, Detroit, MI as well as project sites throughout the United States for the following positions

Software Engineers
Programmer Analysts
Systems Analysts
Database Administrators
Hardware Engineers
Budget Analysts
Systems/Network Administrators
Project Managers
Account Managers/Sales Managers/Business Managers
Sales Engineers
Industrial Engineers
Market Research Analysts
Management Analysts
Human Resource Representative
Accountants

Salary will be commensurate with education and experience. All positions may involve travel or relocating to various client sites through out the US

For consideration please send your resume to.

HCL America Technologies, Inc
Attn. HR Dept (Computerworld Ad.)
330 Potrero Avenue
Sunnyvale, CA 94085
Email: cajobs@hcltech.com

Please indicate the location and the position you are applying for

www.hcltechnologies.com

Web Developer/Programmer

Multiple positions available to primarily develop web-based computer applications, applying knowledge of computer programming techniques & systems

Requirements: Bachelor's degree in Computer Science or related field. Must possess 3 yrs. post-baccalaureate work exp. in position offered or in computer industry. Must be knowledgeable & proficient in (1) one of the following databases (Oracle, VSAM, DB2, SQL Server or Teradata), (2) JAVA, and (3) one of the following high-level languages (VB/ASP, PL/SQL or C/C++). Must be willing to travel & relocate to client sites nationwide frequently. Replies with ref. Code CW2003 via email (steve@sdiworld.com), fax (412-490-0665) or mail (Steve Rydzak, SDI Technologies, 1 Penn Center West, Suite 311 Pittsburgh, PA 15276)

Paymap Inc., a Division of First Data Corporation a company in Greenwood Village, CO specializing in electronic commerce/money transfer has an opening for a Senior Database Administrator to work in San Francisco, CA and other unanticipated job sites in the U.S. Installation, configuration and upgrading of Oracle server software-related products. Requires bachelors degree or foreign equivalent in engineering or computer science, 3 yrs. experience as an Oracle database administrator on Sun Solaris and Windows NT platforms, working knowledge of installation & configuration of Oracle Application servers & standby databases, deploying Oracle Forms on the web, design & creation of OLTP & data warehouse databases, PL/SQL and Shell Programming, as well as Oracle Enterprise Manager. Respond by resume to Norm Bemett, First Data Corporation 6200 S. Quebec St., Greenwood Village, CO 80111 and refer to job #4440MO

Software Engineer. Dev Warehousing data mart & various Logical/Physical data models, Unix Scripts using Erwin 4.0 & ETL for perf Tuning appl. In Test & Production environment. Req. MS in Com. Sci. or Comp Eng. 40 hr/wk. Job/Interview Site Simi Valley, CA. Send resume to Soclear Corp., P.O. Box 2111, Simi Valley, CA 93062-2111.

Sr Programmer Analyst, Denver, CO. Plan, develop, test and document computer programs using RPG/400 programming techniques and AS/400 hardware. B.S., computer science or related field and 2 yrs relevant experience. Fax resumes to N Prentice, TransMontaigne Product Services Inc., 303 626 8245

A position is available for a Quality Assurance Technician with an Atlanta-based technology solutions company. The company architects and designs next generation software for point-of-sale and Internet systems in the retail industry including entertainment, petroleum with convenience or food stores, and restaurants

The Quality Assurance Technician is primarily responsible for assisting the Quality Assurance Manager in the development of standardized repair processes in an effort to identify "best practices" and instill quality into the company's products. Specific responsibilities include developing standardized repair procedures for all new products and assisting in the planning and implementation of testing strategies

Candidates should possess a Bachelor's degree in Computer Engineering or other engineering related field and five years' experience in board-level repair testing, database management, and computer systems repair

Apply by mail to
Christie LoCurto
3925 Brookside Parkway
Alpharetta Georgia 30022

Seeking software engineer with Master's Degree in Computer/Electrical Engineering, Physics or Math + 3 yrs. exp. as Software Engineer or Software Developer to research, design, & develop computer software systems applying principles & techniques of computer science, engineering and mathematical analysis & work with wide variety of platforms. Analyze software requirements, consult with hardware engineers & other engineering staff, evaluate interface between hardware & software & operational & performance requirements of system. Formulate & design software system. Develop & direct software system testing procedures, programming, & documentation. Consult with customers on maintenance of software system & coordinating installation of software systems. Must have experience with XML standards, XSLT, J2EE Architecture, EJB 1.1 and EJB 2.0, JMS, JSP, Java Swing, Java, BEA Weblogic and Customizing GIS software, Rational Tool Suite, UML, Object Oriented Design, Oracle/MSSQL, C and C++, and Sun/Windows software and hardware. Salary $85,000.00/yr. 40 hrs./wk. Applicants must send two (2) copies of resume to Job Order #2003-086, P.O. Box 989, Concord, NH 03302-0989

SOFTWARE CONSULTANT

Analyze & evaluate existing or proposed software sys. Dsgn, dvlp, implement & improve programs, sys. and related procedures to process data using in-depth knowledge of the software dvlpmnt life cycle. Encode, test, debug & install operating programs & other sys. software utilizing knowledge of RDMBS environments & PowerBuilder. B.S. (or equiv.) in Comp. Sci., Comp. Eng. or directly related field + 2 yrs exp. in position offered or as a Prog. Analyst, Sys. Analyst or Software Engnr reqd. Exp. must include: (a) Oracle, Sybase or SQL Server, and (b) PowerBuilder. High mobility preferred. 40 hours/week, 8:00 a.m. to 5:00 p.m., $61,000/yr. Qualified applicants submit resume to: Manager, Washington County Team PA CareerLink, Millcraft Center, suite 150LL, 90 West Chestnut Street, Washington, PA 15301-4517. Please refer to Job Order No. WEB 296707

Senior Software Developer. Provide architectural direction to web app. projects. Design, implement and deploy web apps using J2EE. Execute projects using RUP. Provide object and component modeling using UML. Provide integration solutions between J2EE and EIS platforms using JCA. Design, implement and deploy HROR-BIT Project on UNIX platform, with performance tuning by clustering and load balancing of Weblogic app. Server. Provide SOAP based XML messaging solutions. Must have B.S. in Comp. Sci., Eng. or related degree + 1 yr exp. in job offered or Software Engineer. Must have knowledge of J2EE and EIS platforms (PeopleSoft) using JCA, ADK, SOAP, XML messaging, RUP, UML and UNIX. $72,000/yr. Send resume + cover letter to: CMC, Attn: Aisha Butcher, 6951 Pistol Range Rd, Tampa, FL 33635

GIS Software
Quality Control Specialists.

GIS Software test planning and preparation. Generate test cases and scripts using geographically referenced data, report and coordinate test activities, execute test scripts, record results in a defect tracking pool and implement sound QA testing practices using GNIS, LODE data, GE Small World, Framme, Microstation & Autocad. Communicate and resolve QA issues with Programmers and Developers. Develop & initiate quality standards for new software tools to implement new versions of GIS. 2 years exp. in job offered required. Think Resources, Inc., Attn. GIS Recruiting, 280 Technology Parkway, Norcross, GA 30092. No phone calls please. EOE

PerfCap Corporation is looking for a senior software engineer responsible for the architecture and development of the company's systems performance and capacity planning software products that are intended for secure web based performance management of hybrid IT infrastructures with multiple platforms like HP-UX, IBM AIX, Sun Solaris, TRU64 Unix and Windows 2000. Duties involve development of system data collectors for the mentioned platforms, web based GUIs and management servers. Requires JAVA, C/C++ programming and SQL Server. A bachelor's degree in Engineering or Computer Science with five years experience. Salary $82K. Submit 2 copies of resume to Job Order # 2003-078, PO Box 989, Concord, NH 03302-0989

SolutionsIQ seeks DB Engr for HQ office in Bellevue, WA. DESC: Dsgn, dev & cust. RDBMS, web based tools, components & progs. & encryption techs. for impl. into multi-user financial transactions sys. util. SQL, C#, XML, ASPX, internet protocols, component based techs., OO dsgn & dev and .NET on Win based o/s. REQS: BS in Engr., CS, Math, or Physics + 5 yrs exp dsgn, dev, & impl. RDBMS & rel. apps. for multi-user financial transactions sys. util. SQL, internet protocols, component based techs, OO dsgn. & dev., HLL, and Win plats. Prem. sal + benes. Pls. reply to D. Wittman, Job # SIQ-214, 1260-116th AVE NE, Bellevue, WA 98004

Computer Network Analyst

Computer Consulting Co. seeks qualified indiv. to analyze, design, test & evaluate network systems. Req'd: Master Degree in Comp Sci. Must have MCSE/MCSA. Must have exp. with Java, Unix, &TCP/IP through education or employment. Pls send res to: Infovalue Computing Inc., 4 Westchester Plaza, Elmsford NY 10523 Attn: Sharon Chen

---

PROGRAMMER-ANALYSTS needed to analyze use-cases & class diagrams using Rational Rose, dsgn & customize Livelink applics w/web interface using Livelink Builder & SDK, create interfaces to generate Web docs, create workflows & dsgn forms using Livelink (Workflows, Forms, LAPI), OScript, SQL, JSP, JavaBeans & JDBC. Apply to: Global Consultants, 601 Jefferson Rd, Parsippany, NJ 07054

Computer Consulting Co seeks programmer analysts & database administrators. Bachelor's +2yrs IT exp. Resume to Upp Business Systems, 3075 Highland Parkway, Downers Grove, IL 60515.

Clear Technology is looking for Soft Development Engs & Progr Analysts. Resumes by e-mail/fax only to HR, Clear Technology, 11030 Circle Point Road, Westminster, CO 80020. Fax (303) 583-4168. softwareanalysts@clear-technology.com

---

Senior Software Eng. with Masters degree and two years exp. wanted in Houston, TX. Respond to: HR Dept., Houston Computer Center, Inc. 10641 Harwin Dr., Suite 500, Houston, TX 77036.

CONSULTANT. Analyze user needs & requests, design, dev & implement med to lg apps using various software technologies, such as Java, Javascript, HTML, ASP, Lotus, SQL, MS Office, Dreamweaver, Frontpage, Photoshop, & ACCESS. Must have MS in Comp. Sci., MIS, Information Systems or related field. Send res./cov. ltr to Patricia Sirabella, HR Dir., Gemini Systems, Inc., 61 B'way, #925, NY, NY 10006

Software Developer

Develop customized software solutions to address client's business and commerce needs. Must have Bachelors Degree in Computer Science or in a related field & 3 yrs. exp. or 3 yrs. exp. in a related position w/ability to use Oracle, Windows, Visual Sourcesafe. Willing to travel and relocate across the U.S. 40.0 hrs./wk 8:00 AM - 5:00 PM $75,000/Yr. **Applicants send cover letter and resume to:**

SRA Systems Limited
1945 Cliff Valley Way
Suite 270
Atlanta, GA 30329
Attn: K. Markandan

Page & Olson is a CPA firm, developing as unique software (commander for CPA firms running on TCP/IP LAN. We look for software engineers or system analysts. Candidates must have BS with exp. using ColdFusion and ASP. Send resumes: P.O. Box 368Mt. Pleasant, MI 48804-0368

Adept Computer is seeking IT professionals/engineers. Qualified applicants must have BS with minimum 1-yr exp. Skills in Oracle, Java, XML, J2EE, SQL, JSP, WebLogic/WebSphere, DB2, JDBC, Client/Server are plus. Apply at: 1019 Harmon Blvd., Hoffman Estate, IL 60194. EOE

Kwikset is looking for the following positions.

Software Developer
IT Supply Chain Logistics Project Mgr. to work w/QAD-Mfg/Pro, costing modules, EDI and quality mgmt. Masters degree & 2 yrs. exp.

Resumes by fax/email only to HR, Kwikset, 19701 DaVinci, Lake Forest, CA 92610; Fax (949) 672-4761, e-mail, apply@bdhhi.com.

Software Engineers needed for Houston based firm to work in various unanticipated U.S. locations, to design, develop, implement complex financial business performance management solutions, incl. planning, budgeting, cash flow analysis, forecasting, reporting applications. Utilizing OLAP decision support systems technologies and SQL. Must have Bach. in Comp. Sc. or CIS and 5 yrs. exp. in job offered. Fax resume to COMPOSOFT, HR Dept. at 281-272-2515. Ref Code: Pul SE-1102 on the resume.

Analyst: User Support Analyst Mgr needed by jewelry mfg co to manage internal proj for ERP syst. implementation (Microsoft Navision), manage info syst development & develop user procedures, define & develop mgmt level Performance Measurement Systems (PMS), develop contract mfg planning & controlling syst using Navision C/AL & supervise 3 User Support. Bach Deg or Equiv in Computer Sci or Eng. Mathematics & 4 yrs exp in this field. Send res to Mr Joe Manber, Andel Jewelry LLC, 31-00 47th Ave, LIC, NY 11101

Multiple openings available for Prog/Sys Anal, DBA's, Syst/Admin and S/W Engineers to design/develop S/W appls using some of the following - C++, VC++, Java and web related technologies, HTML, VB Script, CGI, SQL, TSQL, MS Access, Visual Interdev, Active X, COBOL, CICS, DB2, SAP ABAP etc. on Windows, UNIX, NT/Server E OS, Sun Solaris, etc. All positions require a BS/MS or its foreign equivalent. Competitive salary. Some travel/relocation required. Apply to: HR, CipherTrust, Inc., 11475 Great Oaks Way, Ste 210, Alpharetta, GA 30022.

Software Engineer. Design, build & maintain networking Cisco/LAN & sec. sys. including user interface (JSPs) & backend busn. obj (EJBs) w/ use of WebLogic app. server in clustered env on Windows 2000 server & SQL 2000/Oracle/SAP as backend d/b. Req: MS in Comp. Sci., Bld. Sci or related. 40 hrs/wk. Job/Interview Site: Newark, DE. Send resume to AlphaNet Consulting, 705 S. Silver Smith Ln., Newark, DE 19702.

Multiple openings for exp'ed Prog/Sys Analysts, DBAs and S/W Engineers to perform design and development of S/W systems using various H/W, OS, tools, software packages and languages, developing client server, mainframe, midrange, ERP and web applications, Oracle database admin/systems admin. All positions require a BS/MS or foreign equiv in CS/Engg or related field. Competitive salary. Some travel/relocation required. Send Resumes to: HR, Opal Soft, Inc. 3150 Almaden Expwy Ste 205, San Jose, CA 95118.

Asst S/W Eng

Will assist in designing, developing, integrating, and testing desktop & notebook computer test software/hardware architecture. Req. BS in Comp Sci or related field. 40 hr/wk. Job site Irvine, CA. Send resume to eMachines, Inc., 14350 Myford Rd., Irvine, CA 92606. Pls ref to job code: aswang-cw.

Software Developer wanted to design, Develop and Implement Software programs to assist national/international companies, improve sales of product in Retail Outlets. Design, Implement and Manage system to support localized multi-lingual database and websites for international clients. Perform web development including web page design, development, testing, implementation and maintenance. Perform coding using ASP, ASP.NET, VB, VB.NET, VB Script, JavaScript, COM, DCOM, Active X, HTML, DHTML, CSS, XML, XSL, MS SQL Server 7.0/2000, IIS 4.0/5.0, Windows NT/2000/CE& others. 40 hrs/week, 8:00 a.m. to 5:00 p.m. Requires a Bachelor Degree in Computer Science or Electrical Engineering. Please send resume to Panos Mastrogiannis, SPAR Infotech, 580 White Plains Road, 6th Floor, Tarrytown, NY 10591. Employer Paid Ad

Behwan Cybertek Technologies, Inc. has several openings available for qualified Prog/Sys Analysts, Soft. Enggs./Consultants, Proj. Mgrs, DBAs and Sys Admins to design/develop applications using skill sets such as C, C++, VB, VC++, Java, EJB, Oracle, Informix, Sybase, UML, Internet, telephony and wireless technologies. Windows/UNIX admin. Require BS/MS or for. equiv. in Comp Sci/Engg(any branch)/Sci./Math/Bus. related field. Combination of education and experience will be accepted. Highly competitive salaries & benefit. Travel involved. Resumes to: Ste 312, 209 West Central Street, Natick, MA 01760

Prog/Analysts to analyze, design, test enterprise level appls using Java, HTML, VB, ASP, JDBC, Servlets etc. under Windows and UNIX OS, perform database monitoring and quality control, coding and testing of projects: generate batch reports from existing data and debug for better performance. Require BS or foreign equiv in CS/Engg (any branch) and 1 yr exp in IT. High salary. F/T. Travel required. Resumes to Salem Associates, Inc. 405, 6th Ave, Ste 102, Des Moines, IA 50309

Aurora Consulting is looking for Programmer Analyst, Software Engineer to implement Oracle Financials for clients. Candidates must have BS/MS, exp. in Oracle and US work permit. We offer attractive wage. Send resumes to 9093 Countrywood Dr, Plymouth MI 48170. EOE.

Netsoft is an IT consulting firm with offices in different states, has positions for software/project engineers, system/programmer analysts. Req: BS with min 1-yr exp. Preferred skills in Oracle, Seebeyond, SQL, Java. Apply hr@nsic.net or jobs@nsic.net

Sr Programming Analyst (multiple positions). Design customized techn appl programs. Install & config program prod. Determine tech infrastructure & comm. Req. Test appl. Analyze, design & develop app. Interfaces using IBM AS400, RPGLE, C/400 & Java/400. Req. BS in Comp Sci., Comp Eng. Or Elect. Eng. And 5 yrs exp as Programmer. 40 hr/wk. Job/interview site: Irvine, CA. Send resume to SVI Solutions, 5607 Palmer Way, Carlsbad, CA 92008.

Corpus Incorporated hereinafter referred to as "Corpus", is a leading Information Technology Services firm providing innovative B2B, enterprise integration and m-commerce solutions and services to businesses worldwide. We have the following position available:

Business Intelligence Analysts: Utilize Business and Technical Expertise to Systems Application and Products in Data Processing. Analyze User requirements, procedures and problem to automate process, improve computer SAP Systems. Plan, design and implement integrated family of sales, marketing, and customer service applications in SAP FI/CO modules. Utilize tools such as C++, C#, ASP.NET, SeeBeyond, MS SQL Server 2000 and Oracle 9i to provide implementation using object oriented design and Provide post-implementation support. Need Bachelor's in Business Administration or Computer Science or Engineering. Need 2 years of experience in related field.

Programmer Analysts: Plan, design, develop, test and deploy n-tier object-oriented enterprise software applications. Experience in the following technologies required: OOAD, RDBMS, Client Server Technology, Distributed Computing and Configuration and Change Control Management. Also knowledge of the following tools and methodologies is essential: Unix, Oracle, Informix, SQL, C++, Corba, MQ Series, XML, UML, Testing tools and the Rational tools like Rational Rose, Rational Requisite Pro, Clear Case and Clear Quest. Need Bachelor's degree in Engineering or Computer Science and 2 years of experience.

Send resume to: HR, 1300 West Walnut Hill Lane, Suite #250, Irving, TX 75038. E-mail jobs@corpusinc.com

Data Base Administrator. Analyze database management systems and network administration using Oracle database on Unix platforms such as Sun Solaris, IBM AIX, and SCO. Develop backend access using PL/SQL server and SQL Server. Analyze and identify components and features of Recovery Manager (RMAN), configure database for archive processing and identify the contents of user process trace files. Requires: Bachelor of Science degree in Comp. Sci., Eng. or related field and 2 years experience in software development including hands on knowledge of Oracle 8X Administration. 40hrs/wk (8-5). $75,000.00/yr. Send two resumes/responses to: Case Number 200114999, Labor Exchange Office, 19 Staniford Street, 1st Floor, Boston MA 02114

AFI, Inc.

S/W Eng./Sys. Analysts /Techn. - Interface Mgr. Multiple Positions. S/W Eng. & Sys Anal. will dev., code, test, implement & maintain custom S/W pkg. in areas of web dvlpmnt. w/ the use of Windows NT/2000, Visual Basic, Asp, JavaScript, VB Script & SQL Server. Tech - Inter Mgr. will perf. sys. analysis, data mapping, info. archit., web page dvlpmnt. & maintenance for AFI website & custom agent/ CSR appl. & HTML w/ the use of C++, ERD, SQL Scripting, ASP, SQL Server. Req. MS in Comp. Sci. Comp. Eng., S/W Sys., Mech. Eng or Info. Sys. (can be sub. w/ BS + 5 yrs. exp). 40 hrs/wk. Job/Interview Site: Encino, CA. Ref# LA1000. Resumes to: careers@answerfinancial.com

Computer System Administrator

(Yorktown Heights, N.Y.)

Evaluates business requirements for new or modified program to determine cost and time required, compatibility with current system, and required computer capabilities. Consults with managerial and systems operation personnel and systems architects to clarify program intent and objectives, identify problems and suggest changes to Unix Production System. Within time and cost restraints, and considering hardware capabilities, analyzes, researches, designs, and develop computer software systems relating to Unix utilizing principles and techniques of computer science, engineering, and mathematical analysis. Prepares object models and data flow diagrams to develop program considering hardware capabilities and intended use of output data. Plans, schedules, develops, tests, and documents computer programs using object models and data flow diagrams applying knowledge of programming techniques and computer systems. Consults with systems operation personnel to install and maintain the software system. Tests programs, detects, locates and corrects errors. Monitors performance of program after implementation, corrects errors and optimizes for performance. Requires Bachelor degree in Computer Science/ Engineering, Information Technology Systems or equivalent together with three years of experience in the job duties or a Master degree and one year experience. Must have two years experience with DNS BIND and APACHE. Must be able to communicate in English. 40 hours a week; Monday or Friday, 8.30 am to 4.30 pm. $76,357.00 per year. Send resume in duplicate to: AIM-438, P.O. Box 703, NY, NY 10014-0703. EOE.

Computer Software Engineer, Atlanta, GA - Implement designs adhering to well-structured software engineering standards, design specification and the development schedule. Primary modules of responsibility may include Viewer, Movie, Profile Tools, Virtual GIS and New Visualization Capabilities. Test software and on-line help to assure minimum level of quality is met. Maintain software during its life cycle. Bachelor of Science and 3-5 years of GIS/Remote Sensing processing techniques and methodologies experience required. Leica GIS and Mapping Division, LLC. 2801 Buford Highway, NE, Suite 400, Atlanta, GA 30329. jody.stepakoff@gis.leica-geosystems.com

IT Analyst III. Setup & monitor MQ queue structures, middleware Java objects dvlpmt; coding & testing of COBOL/CICS multi-envrmt prgms; dsgn n-tier architecture; ETL data transfer. BS in Comp Sci or related field +6 yrs exp in job offd or as S/ware Engr or similar duties under different job title. Exp must incl middleware dvlpmt involving MQ Series, Cobol, Java, IBM Workflow, Mercator, Maestro, XML, XSL, UML & Business Objects; MVS & Win NT envrmt utilizing DB2 & Oracle 11i; writing & monitoring MQ queues; willingness to travel (up to 20%). 40 hrs/wk. $58K/yr. Must have proof of legal auth to work in US. Send your resume to IA Workforce Center, 215 Keo Way, Ste 100, Des Moines, IA 50309-1727. Please refer to JO# IA1101850. Employer paid ad.

Computer Software Designer

(Yorktown Heights, N.Y.)

Analyzes software requirements to determine feasibility of design within time and cost restraints, and considering hardware capabilities, analyzes, researches, designs, and develops computer software systems or Windows utilizing principles and techniques of computer science engineering, and mathematical analysis. Prepares object models and data flow diagrams to develop program considering hardware capabilities and intended use of output data. Plans, schedules, develops, tests, and documents computer programs using object models and data flow diagrams applying knowledge of programming techniques and computer systems. Consults with systems operation personnel to install and maintain the software system. Tests programs, detects, locates and corrects errors. Monitors performance of program after implementation, corrects errors and optimizes for performance. Requires a Bachelor degree in Computer Science/Engineering, Electrical Engineering, Mathematics or Computer Applications and two years experience or the job duties or a Master degree and one year of experience or two years as a Programmer Analyst or software engineer. Must have two years experience in C++, C, COM, ATL, and all Windows operating systems. Must be able to communicate in English. 40 hours a week, 8.30am to 4.30pm, $85,000 per year. Send resume in duplicate to: AIM-437, PO Box 703, N.Y., N.Y. 10014-0703. EOE.

Member of Technical Staff - Advanced Technology Group. Perform research, analysis, design, development, testing & implementation of transceiver modem. Design & simulate high speed & low power platforms, filters, diplexers, PLLs & other RF circuitry for modem. Design suitable channel coding, modulation & equalization methods for bandwidth efficient, extremely reliable bi-directional communications. Research & investigate design requirements, vendor specs, market trends, & industry standards for parts to be used in circuitry. Perform testing & analysis of hardware prototypes of product design. Develop engineering design analyses & trade-offs for cost, stability, performance & quality to make recommendations to management. Work & collaborate with other engineers to share ideas & resolve s/ware & h/dware issues. Master's degree in Electrical/Electronics Eng'g or a closely related field & 1 yr. experience in job offered or in Communications Systems Research Engineering. Requires demonstrated knowledge of communications systems theory in design of modems & expertise in dvlpmnt & application of broadband, high-speed communication networking, such as modulation, equalization, & channel coding theory. 40 hrs/wk, 9a-6p (M-F); $88,000/yr. Must have unrestricted authorization to work in U.S. Submit resume in duplicate to: Case #200114890, Labor Exchange Office, 19 Staniford St, 1st fl, Boston, MA 02114. EOE

ENGINEERS

Netopia has the following opportunities available in our Orem, Utah location:

Sr. Software Engineers - # 0201

Job Description: Netopia Web Platforms Group (WPG) develops, licenses, and supports hosting solutions enabling customers to do business via the Internet. Netopia's Web Platform is a comprehensive, integrated software system that enables organizations to successfully deploy and manage Web-based services that provide eBusiness solutions including eCommerce, system management, customer relationship mgmt. (eCRM) & broadband deployment.

Senior Software Engineers are a part of the Engineering group in Orem, Utah. The group has resp. for developing, creating, & modifying Netopia's next-generation Java/J2EE application server database schema, & applications. Senior Software Engineers will develop core technologies, objects, & database schema designs to meet the needs of independent merchants, VARs, franchisers, & co partners who host their own WPS-based services. Job resp. also include leading key pieces of the engineering effort on

Netopia's next-generation web platform technology, & the underlying data access technologies. Candidates must be able to design & implement object-oriented code, related database schema objects, & user interface using current & emerging technologies.

Job Resp.: Develop, create, implement, & modify core technologies and application features, architect & design algorithms & methods for increasing performance while moderating resource consumption; detect & resolve database issues in Oracle8i or newer.
Job Req.: MS or CS/Engr. + 2 yrs. exp. in dev. software for commercial applications. Exp. must include 2 yrs. of Software development with RDBMS development/design; Web application technologies, team-based source code control processes/systems such as CVS.

Database Administrators - # 0202

Job Resp.: Database Administrators will develop & implement strategies for maintaining security roles, privileges, & authentication for Netopia's internal product database. Resp. include: Creating & maintaining all backup procedures, installing & upgrading SQL Net & TCP/IP processes, Oracle & supporting products, providing recommendations & impact analysis of Oracle & related software purchases through the collection & analysis of relevant app performance information using various software tools, identifying & implementing appropriate solutions for database performance problems, & maintaining documentation on database, applications, and licenses.
Job Req.: BS or equiv. combination of education & exp. in CS/MIS or a closely related technical field + 4 yrs. of exp. in analysis, design, development & administration in Oracle (PL/SQL).

Must have at least 2 yrs. exp. in each of the following: Templative sites & online stores or a production-located environment; data warehousing & administration of Oracle8i databases including database backups, recovery, performance tuning on Sun Solaris, HP UX, & Windows NT; database applications in the financial, credit card, and/or accounting arena.

For consideration, please indicate job number and email resumes to
employment@netopia.com. EOE

American Information Technology Corp has several openings for Programmer Analyst/Systems Analyst/Software Engineer, System Admn, Database Administrator with at least two years of experience in any of the following skills.

Database Admn: Informix, Oracle, Sybase, MS SQL, DB2.
Systems Admn: UNIX (SUN, HP-UX, AIX) WIN NT MVS.
Programmer Analysts/Systems Analysts/Software Engineers. VB, PB, AS/400, RPG/400, Synon, JDEdwards, Progress, Java, J2EE, HTML, WEB, E-commerce, C++, VC++, Lotusnotes, CORBA, EDI/Mercator, CGI, Perl, PL/SQL, Oracle, Cobol, JCL, Cognos, Erwin, ETL, Peoplesoft, SAP, DW, BO, Coldfusion, TIBCO, Net, C#, Oracle Financials, Datastage, CRM, Actuate

Some positions require a Bachelors Degree, others Masters Degree. Equivalent degree and experience is also accepted. Exc. Pay & Benefits. Please indicate the position you are applying. Mail resume to HR Dept., 3204 Long Prairie Road, Suite E, Flower Mound, Texas - 75022

COMPUTER/IT
Senior Analyst, Vega HR (Troy, MI). Requires a Bach.'s degree (or equiv. foreign educ.) in I.T., M.I.S., or computer systems analysis, and 2 yrs.' exp. in the job offered or 2 yrs.' exp. in development and configuration of SAP R/3 Human Resources (H.R.) module utilizing Accelerated SAP (ASAP) methodology. All stated exp. must involve each of the following: definition of functional specifications for the development of custom reports, interfaces, conversions, & enhancements, definition of SAP R/3 H.R. module security requirements, & use of automated test tools. Exp. must include one full lifecycle of SAP R/3 H.R. module development. In lieu of Bach.'s degree (or equiv. foreign educ.), will accept 2 additional yrs. of systems analysis exp. Engage in development & configuration of SAP R/3 H.R. module over a full lifecycle utilizing ASAP methodology. 40 hrs./wk. 8:00-5:00. Apply with resume to LaWanda White, Delphi Corporation, 5825 Delphi Dr., Troy, MI 48098. EOE. Reference #0116 when applying.

IT CAREER OPPORTUNITIES

CSC has the following positions available in Massachusetts:

- **ERP Program Director**
- **ERP Product Specialist**

We offer excellent compensation and a comprehensive benefits package. Positions may require BS, MS, relevant experience or combination of education and experience based on the level of position. National travel of up to 100% may be required. Please forward resume to B. Neer, 5885 Landerbrook Dr. #300, Cleveland, OH 44124. Must indicate job title in cover letter.

HTTP://CAREERS.CSC.COM

CSC

Lead Software Developer
Waltham, MA

Requires experience in design and development of applications using Java, UML, Oracle, XML, Websphere, UNIX and NT. Experience working in Biotech or Pharmaceutical industry a plus. Attractive compensation package. Please send resumes to: Human Resources, 40 Bear Hill Road, Waltham, MA 02451. e-mail: work@beyondgenomics.com

---

Multiple openings for permanent Programmer Analyst/Quality Assurance/Test Engineers/Database Administrators/System or Network Engineers/Business Analyst/Software Engineer positions from entry to senior level throughout the US. Will design, develop, program and test business applications, enterprise systems, networks and computer systems involving TPF, sales force automation, data warehousing, business metrics, E-commerce, Internet/Web applications, and others using object oriented design and development, relational database modeling, distributed systems, and current Web technologies. Particular tools include one or more of: JAVA, C/C++, Visual Basic, ASP, ActiveX, UNIX, PL/SQL, SAP, Windows NT, Lotus Notes, Perl, COBOL, IMS, CICS, DB2, TPF, Assembler, CORBA, HP/UX, COM/DCOM, OLE, CGI, Internet technologies such as HTML, JDK 1.2, Java Web Server 2.0, EJB in Sun Solaris, Windows NT 95/98, and others. B.S. in Computer Science, Engineering, Math, or related area. Will accept combination of education, training and experience in lieu of degree. Prior experience and M.S. required for some positions. Competitive salary/401(k)/benefits offered. Most active locations include: Atlanta, GA, Bloomington, MN, Chicago, Peoria, Normal, IL, San Francisco, San Jose, CA, Baltimore/Columbia, Maryland, Durham, NC, Ft. Lauderdale, Jacksonville, Miami, Tallahassee, FL, Minneapolis, MN, Fairfax, Herndon and Richmond, VA, St. Louis, MO, Raleigh, Winston-Salem, NC, Cedar Rapids, Des Moines, IA, Hazlet, NJ, Kansas City, KS, Milwaukee, WI. Send resume to: IntelliMark/Technisource, 12140 Woodcrest Executive Drive, Suite 300, St. Louis, MO 63141, Attn: Betsy Smith.

SOFTWARE ENGINEER to design, develop and support application software in a client/server environment using object oriented analysis, C, C++, COBOL, SPII, Visual Basic, MS-SQL, Oracle, Log-Analyzer, ASP, Visual Studio and Universal DB2 on Windows NT/XP, UNIX and IBM MVS OS390 platforms. Develop Graphical User Interfaces. Require Bachelor's degree in Computer Science/Engineering, or a closely related field, with five years of progressively responsible experience in the job offered or as a Programmer/Analyst or Programmer. Extensive travel on assignments to various client sites within the U.S. is required. Competitive salary offered. Send resume to: Satish Kumar Ashok, CSR Data Systems, Inc., 21 Crestwood Street, Piscataway, NJ 08854. Attn: Job SR.

Open Text, Inc. is seeking a Software Developer - Japanese Applications in its Chicago area and Detroit area offices. Responsibilities include testing, debugging, fixing software defects, analysis, documenting, programming, testing of software for Japanese applications. BS/MIS in Computer Science is a must. Excellent written, verbal and conceptual skills required in both Japanese and English languages. Please fax resume to 847-267-9385

Satyam Computer Services Ltd., a leading software consulting company, seeks computer professionals for various positions including Programmer Analyst, Database Administrator, Systems Analyst, Business Systems Analyst, Quality Engineer and Software Engineer. Opportunities exist for qualified applicants with 1-7 years of related experience with one or more of the following:

- User Interface Design
- Performance monitoring and Tuning
- Operating System Level Tuning
- Client/server object Oriented Development
- Case Tools/Modeling
- IBM Mainframe Tools
- Communications & Networking
- Web Development
- E-Business
- RDBMS
- Database Administration
- Business process or Technical Re-Engineering
- Software Implementation
- Supply chain Management
- Enterprise Resource Planning
- Enterprise Systems Management
- Object/Distributed Technologies
- Middleware
- Groupware
- Data Warehousing
- QA Environments
- Communications & Networking
- Customer Information Systems
- Billing Systems

All positions require a Bachelor's degree in a related field. Some positions require a Master's degree and all positions require frequent relocation. Opportunities available through out US. Please email your resume with Job Code #GENITC 1202 including salary requirements to:
resumeus@satyam.com

SOFTWARE ENGINEER

Software engineer to design, develop and test computer programs for business applications; analyze software requirements to determine feasibility of design; direct software system testing procedures using expertise in Natural, Adabas, JCL and Expeditor. Requirements: Bachelor's Degree or equivalent in Computer Science or related field and two years experience as a software engineer or computer programmer; knowledge of Natural, Adabas, JCL and Expeditor. Salary: $66,000/year. Working Conditions: 8:00 A.M. to 5:00 P.M., 40 hours/week, involves extensive travel and frequent relocation. Apply: Manager, Armstrong County Team PA CareerLink, 1270 North Water Street, PO Box 759, Kittanning, PA 16201, Job No. WEB295663.

Project Managers and SAP Consultants needed. Seeking candidates poss. MS/BS or equiv. and/or rel. work exp. Part of the req. rel. exp. must include 3 yrs using Java and Oracle or ABAP4, Oracle and SAP. Duties include: Perform software analysis, design and development. Knowledge of gas pipeline industry standards a plus for Project Manager position. Mail res., ref. and sal. req. to: K2Systems, Inc., 555 Republic Drive, #305, Plano, TX 75074

COMPUTERWORLD HEADQUARTERS

500 Old Connecticut Path, P.O. Box 9171
Framingham, MA 01701-9171
Phone (508) 879-0700
Fax (508) 875-4394

CHIEF OF STAFF
Laureen Austermann
(508) 820-8522

VICE PRESIDENT/CIO
Rick Broughton
(508) 620-7700

VICE PRESIDENT/EDITOR IN CHIEF
Maryfran Johnson
(508) 620-7724

SENIOR VICE PRESIDENT/ STRATEGIC PROGRAMS
Ronald L. Milton
(508) 820-8661

EXECUTIVE VICE PRESIDENT
Matthew C. Smith
(508) 820-8102

VICE PRESIDENT CIRCULATION
Carol A. Spach
(508) 935-4038

PRODUCTION

Vice President Production/Carolyn Medeiros, Production Manager/Beverly Wolff, **PRINT DISPLAY ADVERTISING:** (508) 820-8232, Fax (508) 879-0446 **DISTRIBUTION:** Distribution Manager/Bob Wescott

MARKETING

MARKETING: Director of Marketing/Kelly Sheridan, **AUDIENCE AND MARKET RESEARCH:** Director/Joanne Oteri; Research Analyst/Seanna Maguire

STRATEGIC PROGRAMS AND EVENTS

BOSTON: Vice President Strategic Programs and Events/Leo Leger; Director, Sales and Marketing, Strategic Programs and Events/Ann Harris; Director, Event Marketing and Conference Programs/Derek Hulitzky; Group Manager Strategic Programs and Events/Michael Meleedy; Event Operations Coordinator/ Lynn Mason, Conference Coordinator/Nanette Jurgelewicz, Event Program Coordinators/Kate Davis, Pam Malingowski; Administrative Coordinator/Shari Redan, Senior Graphics Production Coordinator/Heidi Broadley. 500 Old Connecticut Path, Box 9171, Framingham, MA 01701-9171, (508) 879-0700, Fax (508) 875-6310

ONLINE ADVERTISING

Director of Online Sales/Operations Gregg Pinsky, (508) 271-8013, Manager of Online Sales/Business Development, Matt Duffy, (508) 820-8145 500 Old Connecticut Path, Box 9171, Framingham, MA 01701-9171, Fax (508) 879-0446, Inside Sales/Account Associate/Norma Tamburrino, Mack - Cali IV, 61 South Paramus Rd. 3rd Floor, Paramus, NJ 07652, (201) 587-7314, Fax (201) 712-9786

ITCAREERS ADVERTISING SALES OFFICES

Director, Recruitment Advertising Sales/Nancy Percival, 500 Old Connecticut Path, Framingham, MA 01701-9171, (800) 762-2977, Fax (508) 875-6310 **EAST:** Regional Manager/Deanne Holzer, (516) 466-3760 **MIDWEST/WEST:** Regional Manager/Laura Wilkinson, (773) 529-7811

LIST RENTAL

POSTAL: Rich Green (508) 370-0832, e-mail: rich_green@idg.com. **E-MAIL:** Christine Cahill (508) 370-0808, e-mail: christine_cahill@idg.com. **MAILING ADDRESS:** IDG List Services, P.O. Box 9151, Framingham, MA 01701-9151, FAX (508) 370-0020

COMPUTERWORLD SALES OFFICES

SENIOR VICE PRESIDENT/ ASSOCIATE PUBLISHER
Sherry Driscoll-Coleman

KEY ACCOUNTS
VICE PRESIDENT: Linda Holbrook; **FIELD MARKETING ASSOCIATE:** Elisa Phillips, 177 Bovet Road, Suite 400, San Mateo, CA 94402 (650) 357-0200 Fax (650) 524-7000

ACCOUNT DIRECTOR: Kevin Ebmeyer; **SALES OPERATIONS MANAGER:** Emmie Hung, 177 Bovet Road, Suite 400, San Mateo, CA 94402, (650) 357-0200, Fax (650) 524-7000

WEST COAST REGIONAL VICE PRESIDENT: Rob Regan; **ACCOUNT DIRECTORS:** Debbie Sorich, Kevin Ebmeyer; **SALES ASSOCIATE:** Christy Berger; **SALES OPERATIONS MANAGER:** Emmie Hung, 177 Bovet Road, Suite 400, San Mateo, CA 94402, (650) 357-0200, Fax (650) 524-7000

SOUTHWESTERN STATES

SENIOR SALES ASSOCIATE: Jean Dellarobba, Bill Hanck (949) 442-4006, 18831 Von Karman Avenue, Suite 200, Irvine, CA 92612, (949) 442-4053, Fax (949) 476-8724

ACCOUNT DIRECTOR: Maureen Grady; **FIELD MARKETING ASSOCIATE:** John Radzniak, Mack - Cali IV, 61 South Paramus Rd. 3rd Floor, Paramus, NJ 07652, (201) 587-0090, Fax (201) 587-9255, (201) 587-1289

CENTRAL STATES

ACCOUNT DIRECTOR: Tom Buckley, 3602 Green Emerald Terrace, Austin, TX 78739, (512) 280-7484, Fax (512) 280-7104; **SENIOR SALES ASSOCIATE:** Jean Dellarobba, 18831 Von Karman Avenue, Suite 200, Irvine, CA 92612, (949) 442-4053, Fax (949) 476-8724

NEW ENGLAND STATES, MINNESOTA, WISCONSIN

ACCOUNT DIRECTOR: Laurie Marinone; **FIELD MARKETING ASSOCIATE:** Deborah Crimmings, 500 Old Connecticut Path, Framingham, MA 01701, (508) 879-0700, Fax (508) 270-3882

METRO NEW YORK

ACCOUNT DIRECTORS: John Bosso, Maureen Grady; **FIELD MARKETING ASSOCIATE:** John Radzniak, Mack - Cali IV, 61 South Paramus Rd. 3rd Floor, Paramus, NJ 07652, (201) 587-0090, Fax (201) 587-9255, (201) 587-1289

SOUTHEASTERN STATES/ILLINOIS

ACCOUNT DIRECTOR: Lisa Ladle-Wallace, 5242 River Park Villas Dr., St. Augustine, FL 32092, (800) 779-5622, Fax (800) 779-8622; **FIELD MARKETING ASSOCIATE:** Deborah Crimmings, 500 Old Connecticut Path, Framingham, MA 01701, (508) 879-0700, Fax (508) 270-3882

ADVERTISER'S INDEX

INTERNATIONAL DATA GROUP

CHAIRMAN OF THE BOARD
Patrick J. McGovern

CEO
Pat Kennedy

COMPUTERWORLD is a business unit of IDG, the world's leading technology media, research and event company. IDG publishes more than 300 magazines and newspapers and offers online users the largest network of technology-specific sites around the world through IDG.net (www.idg.net), which comprises more than 330 targeted Web sites in 80 countries. IDG is also a leading producer of 168 computer-related events worldwide, and IDG's research company, IDC, provides global market intelligence and advice through 51 offices in 43 countries. Company information is available at www.idg.com.

IDG

Have a problem with your Computerworld subscription?

We want to solve it to your complete satisfaction, and we want to do it fast.
Please write to: **Computerworld, P.O. Box 512, Mt. Morris, IL 61054-0512.**

Your magazine subscription label is a valuable source of information for you and us. You can help us by attaching your magazine label here, or copy your name, address, and coded line as it appears on your label. Send this along with your correspondence.

ADDRESS CHANGES OR OTHER CHANGES TO YOUR SUBSCRIPTION
All address changes, title changes, etc. should be accompanied by your address label, if possible, or by a copy of the information that appears on the label, including the coded line.

YOUR NEW ADDRESS GOES HERE:

ADDRESS SHOWN: ☐ Home ☐ Business

NAME

TITLE COMPANY

ADDRESS

CITY STATE ZIP

OTHER QUESTIONS AND PROBLEMS
It is better to write us concerning your problem and include the magazine label. Also, address changes are handled more efficiently by mail. However, should you need to reach us quickly, the following toll-free number is available: **(800) 552-4431 Outside U.S. call (815) 734-1180.**
Internet address: circulation@computerworld.com

[illegible]

NAME
TITLE COMPANY
ADDRESS
CITY STATE ZIP

How to Contact COMPUTERWORLD

We invite readers to call or write with their comments and ideas. It is best to submit ideas to one of the department editors and the appropriate beat reporter.

Maryfran Johnson, editor in chief
(508) 820-8179

DEPARTMENT EDITORS

Dan Tennant, News editor ... (508) 820-7714
Craig Stedman, assistant News editor ... (508) 820-8120
Julia King, Management editor ... (610) 532-7599
Jean Consilvio, assistant Management editor ... (508) 820-8562
Tommy Peterson, Technology editor ... (508) 820-7729
Mitch Betts, director Knowledge Centers ... (301) 262-8243

REPORTERS

Bob Brewin, mobile computing/wireless; Intel PCs and servers; health care ... (505) 425-3551
Matt Hamblen, networking; network systems management; e-commerce ... (508) 820-8567
Thomas Hoffman, information economics; IT investment issues; energy ... (845) 988-9630
Lucas Mearian, financial services; storage; IT management ... (508) 820-8215
Linda Rosencrance, general assignment; transportation/carriers ... (508) 628-4734
Carol Sliwa, Microsoft; Web services technologies; application development; retail industry ... (508) 628-4731
Marc L. Songini, ERP; supply chain; CRM; databases; data warehousing; EAI; CA ... (508) 820-8182
Patrick Thibodeau, state/federal government; antitrust; legal issues; politics ... (202) 333-2448
Dan Verton, security; defense and aerospace; travel ... (703) 321-2277
Jaikumar Vijayan, enterprise systems; ASPs/outsourcing; security; manufacturing ... (630) 978-8390
Todd R. Weiss, general assignment; Linux; messaging/collaboration ... (717) 560-5255

OPINIONS

Patricia Keefe, editor at large ... (508) 820-8183
Mark Hall, opinions editor ... (503) 391-1158
Frank Hayes, senior news columnist ... (503) 252-0100

FEATURES EDITORS

Ellen Fanning, special projects editor ... (508) 820-8204
Robert L. Mitchell, technology evaluations editor ... (508) 820-8177
Gary H. Anthes, editor at large ... (703) 536-9233

COMPUTERWORLD.COM

Tom Monahan, online director ... (508) 820-8218
Sharon Machlis, managing editor/online ... (508) 820-8231
Ken Mingis, online news editor ... (508) 820-8545
Marian Prokop, online editor at large ... (508) 620-7717
David Ramel, e-mail newsletter/online editor at large ... (508) 820-8269
Brian Sullivan, online editor at large ... (508) 620-7780
John R. Brillon, associate art director ... (508) 820-8216
David Waugh, associate art director ... (508) 820-8142
Keeley Guillerme, marketing associate/researcher
Peter Smith, Web development manager
Kevin Gerich, Mark Savery, Web developers
Bill Rigby, associate Web developer
Matthew Moring, graphics designer

RESEARCH

Mari Keefe, research manager
Gussie Wilson, research associate

COPY DESK

Jamie Eckle, managing editor/production ... (508) 820-8202
Michele Lee DeFilippo, assistant managing editor/production ... (508) 820-8126
Bob Rawson, Monica Sambataro, senior copy editors
Eugene Demaitre, Mike Parent, copy editors

GRAPHIC DESIGN

Stephanie Faucher, design director ... (508) 820-8235
April O'Connor, associate art director
Julie D'Errico, graphic designer
Susan Cahill, graphics coordinator
John Klossner, cartoonist

ADMINISTRATIVE SUPPORT

Linda Gorgone, office manager ... (508) 820-8176
Cheryl Dudek, administrative assistant ... (508) 820-8178

CONTRIBUTING COLUMNISTS

John Berry, David Foote, Pimm Fox, Michael Gartenberg, Dan Gillmor, Thornton A. May, David Moschella, Bart Perkins, Nicholas Petreley

CONTRIBUTING WRITERS

Amy Helen Johnson, Russell Kay, Sami Lais, Kathleen Melymuka, Deborah Radcliff

GENERAL INFORMATION

TELEPHONE/FAX

Main phone number ... (508) 879-0700
All editors unless otherwise noted below
Main fax number ... (508) 875-8931
24-hour news tip line ... (508) 620-7716

E-MAIL

Our Web address is www.computerworld.com.
Staff members' e-mail follows this form: firstname_lastname@computerworld.com.
For IDG News Service correspondents: firstname_lastname@idg.com.

LETTERS TO THE EDITOR

Letters to the editor are welcome and should be sent to: letters@computerworld.com. Include your address and telephone number.

MAIL ADDRESS

PO Box 9171, 500 Old Connecticut Path, Framingham, Mass. 01701

SUBSCRIPTIONS/BACK ISSUES

Subscription rates: U.S., [illegible]/year; Canada, $220/year; Central and South America, $290/year; all others, $295/year

Phone ... [illegible]
E-mail ... cw@omeda.com
Back Issues ... [illegible]

REPRINTS/PERMISSIONS

Contact ... [illegible]
Phone ... (717) 399-1900, ext. 172
E-mail ... reprints@reprintbuyer.com
Visit www.reprintbuyer.com to obtain quotes and order reprints online.

COMPANIES IN THIS ISSUE

Page number refers to page on which story begins. Company names can also be searched at www.computerworld.com.

Continued from page 1

Trustworthy

the BSD Unix operating system. "It is fairly secure, but it is also fairly devoid of any but the simplest of operating system functionality."

Craig Mundie, chief technical officer of advanced strategies and policy at Microsoft, likened the technological challenge Microsoft faces to "chasing a rocket ship."

"We continue to scale up the capability of the systems. As they get bigger and bigger, complexity mounts, and to some extent, those things all work against the idea that, well, can we really get this thing stabilized and improved?" Mundie said. He said he worries about maintaining the balance "between having to make the product and the business go forward and trying to lock it all down."

"If things weren't moving, it would be easier," Mundie said. "But they have to keep moving, or there would be no business."

Looking at it from a business management standpoint, he noted the challenges the company faces in coming up with audit measurements to ensure that "the effort doesn't dissipate," especially since it could take 10 to 20 years to achieve technological success. Yet another problem is the testing issues the company confronts when it decides that it needs to make a security fix that will affect a system as large as Windows, Mundie said.

THE STORY SO FAR

Visit our Web site for a timeline of Microsoft's security moves in 2002:

QuickLink 35562
www.computerworld.com

Several IT managers said they think Microsoft's Trustworthy Computing progress should be judged based on the number of vulnerabilities they see in future releases. But many customers may continue to use older products that haven't been the focal point of Microsoft's security push.

"In the short term, I'm resigned to an increasing cycle of patches and updates to existing systems that my already overwhelmed technicians have to implement," said Paul Lanham, senior vice president and chief technology officer at Jones Apparel Group Inc. in Bristol, Pa. "I'm hoping that the next generation of products from Microsoft addresses these issues so that there is a reasonable balance between the features that customers insist upon and basic security measures in the products offered."

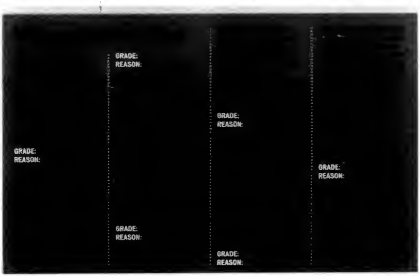
Marc Maiffret, co-founder and chief hacking officer of eEye Digital Security Inc. in Aliso Viejo, Calif., said Microsoft should be devoting more attention to ridding its current products of vulnerabilities. "It seems like they're much more worried about tomorrow, which they should be. But I think today is even more important," he said.

As nice as it would be, reviews of older products may not be a realistic expectation, said Jason Fossen, a SANS Institute lecturer and president of Fossen Networking & Security, a Windows security consultancy in Dallas. "If they're fixing old stuff, there are fewer resources being dedicated to the current version," he said. "It's better to focus on Windows .Net Server and Windows XP."

Indeed, Microsoft is pinning its hopes on its newly renamed Windows Server 2003 operating system to showcase the fruits of its security labors. It shuttered Windows production for 10 weeks last year to do security training and code reviews. One big change is that the Web server and other potentially vulnerable features are turned off by default.

But Walt Smith, chief architect at a large U.S.-based financial institution, is worried that Microsoft will become "easily distracted" from its latest security efforts, which "bring them only delayed gratification in terms of revenue."

"As soon as the next killer application comes along, Microsoft will go chasing after it and forget all about making their infrastructure and product offerings robust and reliable, at least until the next security exposure," Smith said. ◆



Security Focus

Mike Nash, vice president of Microsoft's security business unit, said the company's Trustworthy Computing "journey" has so far included the following efforts.

SECURE BY DESIGN: Reduce the number of vulnerabilities in products from a design and implementation perspective.

- **2002:** Trained more than 11,000 employees on what it means to design and write secure code, made developers accountable for security and released security-focused service packs for Windows XP and 2000.

SECURE BY DEFAULT: Reduce the attack surface area by shipping software with potentially vulnerable components disabled.

- **2002:** Turned off vulnerable features, such as the Web server, in Windows Server 2003, and changed share permissions in Windows XP via Service Pack 1.

SECURE IN DEPLOYMENT: Supply tools, documentation and guidance to empower users to protect their environments.

- **2002:** Released the Software Update Services critical patch deployment tool, made automatic update feature available to Windows 2000 users, released Microsoft Baseline Security Analyzer and introduced prescriptive documents for Windows 2000 and Exchange Server.

COMMUNICATION: Share information with customers and security professionals.

- **2002:** Instituted a new severity rating system and added consumer security bulletins.

Periodical postage paid at Framingham, Mass., and other mailing offices. Posted under Canadian International Publication agreement #40063800. CANADIAN POSTMASTER: Please return undeliverable copy to PO Box 1632, Windsor, Ontario N9A 7C9. Computerworld (ISSN 0010-4841) is published weekly, except a single combined issue for the last two weeks in December by Computerworld Inc., 500 Old Connecticut Path, Box 9171, Framingham, Mass. 01701-9171. Copyright 2003 by Computerworld Inc. All rights reserved. Computerworld can be purchased on microfilm and microfiche through University Microfilms Inc., 300 N. Zeeb Road, Ann Arbor, Mich. 48106. Computerworld is indexed. Back issues, if available, may be purchased from the circulation department. Photocopy rights: permission to photocopy for internal or personal use is granted by Computerworld Inc. for libraries and other users registered with the Copyright Clearance Center (CCC), provided that the base fee of $3 per copy of the article, plus 50 cents per page, is paid directly to Copyright Clearance Center, 27 Congress St., Salem, Mass. 01970. Reprints (minimum 100 copies) and permission to reprint may be purchased from Ray Trynovich, Computerworld Reprints, c/o Reprint Management Services, Greenfield Corporate Center, 1811 Olde Homestead Lane, Lancaster, Pa. 17601, (717) 399-1900 Ext. 124. Fax: (717) 399-8900. Web site: www.rmsreprints.com. E-mail: rtry@rmsreprints.com. Requests for missing issues will be honored only if received within 60 days of issue date. Subscription rates: $5 per copy; U.S. – $160 per year; Canada – $220 per year; Central & So. America, $250 per year; Europe – $295 per year; all other countries – $295 per year. Subscriptions call toll-free (888) 559-7327. POSTMASTER: Send Form 3579 (Change of Address) to Computerworld, PO Box 3500, Northbrook, Ill. 60065-3500.

BPA ABM

How to Contact COMPUTERWORLD

We invite readers to call or write with their comments and ideas. It is best to submit ideas to one of the department editors and the appropriate beat reporter.

Maryfran Johnson, editor in chief
(508) 820-8179

DEPARTMENT EDITORS

Don Tennant, News editor	(508) 820-7714
Craig Stedman, assistant News editor	(508) 820-8120
Julia King, Management editor	(610) 532-7599
Jean Consilvio, assistant Management editor	(508) 820-8562
Tommy Peterson, Technology editor	(508) 820-7729
Mitch Betts, director, Knowledge Centers	(301) 262-8243

REPORTERS

Bob Brewin, mobile computing/wireless, Intel PCs and servers, health care	(505) 425-3551
Matt Hamblen, networking, network systems management, e-commerce	(508) 820-8567
Thomas Hoffman, information economics, IT investment issues, energy	(845) 988-9630
Lucas Mearian, financial services, storage, IT management	(508) 820-8215
Linda Rosencrance, general assignment, transportation/carriers	(508) 820-4734
Carol Sliwa, Microsoft, Web services technologies, application development, retail industry	(508) 820-4731
Marc L. Songini, ERP, supply chain, CRM, databases, data warehousing, EAI, CA	(508) 820-8182
Patrick Thibodeau, state/federal government, antitrust, legal issues, politics	(202) 333-2448
Dan Verton, security, defense and aerospace, travel	(703) 321-2277
Jaikumar Vijayan, enterprise systems, ASPs/outsourcing, security, manufacturing	(630) 978-8390
Todd R. Weiss, general assignment, Linux, messaging/collaboration	(717) 560-5255

OPINIONS

Patricia Keefe, editor at large	(508) 820-8183
Mark Hall, opinions editor	(503) 391-1158
Frank Hayes, senior news columnist	(503) 252-0100

FEATURES EDITORS

Ellen Fanning, special projects editor	(508) 820-8204
Robert L. Mitchell, technology evaluations editor	(508) 820-8177
Gary H. Anthes, editor at large	(703) 536-9233

COMPUTERWORLD.COM

Tom Monahan, online director	(508) 820-8218
Sharon Machlis, managing editor/online	(508) 820-8231
Ken Mingis, online news editor	(508) 820-8545
Marian Prokop, online editor at large	(508) 820-7717
David Ramel, e-mail newsletter/online editor at large	(508) 820-8269
Brian Sullivan, online editor at large	(508) 820-7780
John R. Brillon, associate art director	(508) 820-8216
David Waugh, associate art director	(508) 820-8142

Kasley Guillermo, marketing associate/researcher

Peter Smith, Web development manager
Kevin Gerich, Mark Savery, Web developers
Bill Rigby, associate Web developer
Matthew Moring, graphics designer

RESEARCH

Mari Keefe, research manager
Gussie Wilson, research associate

COPY DESK

Jamie Eckle, managing editor/production	(508) 820-8202
Michele Lee DeFilippo, assistant managing editor/production	(508) 820-8126

Bob Rawson, Monica Sambataro, senior copy editors
Eugene Demaitre, Mike Parent, copy editors

GRAPHIC DESIGN

Stephanie Faucher, design director	(508) 820-8235

April O'Connor, associate art director
Julie D'Errico, graphic designer
Susan Cahill, graphics coordinator
John Klossner, cartoonist

ADMINISTRATIVE SUPPORT

Linda Gorgone, office manager	(508) 820-8176
Cheryl Dudek, administrative assistant	(508) 820-8178

CONTRIBUTING COLUMNISTS

John Berry, David Foote, Pimm Fox, Michael Gartenberg, Dan Gillmor, Thornton A. May, David Moschella, Bart Perkins, Nicholas Petreley

CONTRIBUTING WRITERS

Amy Helen Johnson, Russell Kay, Sami Lais, Kathleen Melymuka, Deborah Radcliff

GENERAL INFORMATION

TELEPHONE/FAX

Main phone number .... **(508) 879-0700**
All editors unless otherwise noted below
Main fax number ...... **(508) 875-8931**
24-hour news tip line ... **(508) 620-7716**

E-MAIL

Our Web address is **www.computerworld.com.**

Staff members' e-mail follows this form: **firstname_lastname@computerworld.com.**

For IDG News Service correspondents: **firstname_lastname@idg.com.**

LETTERS TO THE EDITOR

Letters to the editor are welcome and should be sent to: **letters@computerworld.com.** Include your address and telephone number.

MAIL ADDRESS

**PO Box 9171, 500 Old Connecticut Path,
Framingham, Mass. 01701**

SUBSCRIPTIONS/BACK ISSUES

Subscription rates: U.S., $190/year; Canada, $220/year; Central and South America, $250/year; all others, $295/year

Phone .... **(888) 559-7327**
E-mail .... **cw@omeda.com**
Back Issues .... **(508) 820-8167**

REPRINTS/PERMISSIONS

Contact .... **Renee Wywadis**
Phone .... **(717) 399-1900, ext. 172**
E-mail .... **rwywadis@reprintbuyer.com**

Visit **www.reprintbuyer.com** to obtain quotes and order reprints online.

COMPANIES IN THIS ISSUE

Page number refers to page on which story begins. Company names can also be searched at **www.computerworld.com**

Continued from page 1

Trustworthy

the BSD Unix operating system. "It is fairly secure, but it is also fairly devoid of any but the simplest of operating system functionality."

Craig Mundie, chief technical officer of advanced strategies and policy at Microsoft, likened the technological challenge Microsoft faces to "chasing a rocket ship."

"We continue to scale up the capability of the systems. As they get bigger and bigger, complexity mounts, and to some extent, those things all work against the idea that, well, can we really get this thing stabilized and improved?" Mundie said. He said be worries about maintaining the balance "between having to make the product and the business go forward and trying to lock it all down."

"If things weren't moving, it would be easier," Mundie said. "But they have to keep moving, or there would be no business."

Looking at it from a business management standpoint, he noted the challenges the company faces in coming up with audit measurements to ensure that "the effort doesn't dissipate," especially since it could take 10 to 20 years to achieve technological success. Yet another problem is the testing issues the company confronts when it decides that it needs to make a security fix that will affect a system as large as Windows, Mundie said.

Several IT managers said they think Microsoft's Trustworthy Computing progress should be judged based on the number of vulnerabilities they see in future releases. But many customers may continue to use older products that haven't been the focal point of Microsoft's security push.

"In the short term, I'm resigned to an increasing cycle of patches and updates to existing systems that my already overwhelmed technicians have to implement," said Paul Lanham, senior vice president and chief technology officer at Jones Apparel Group Inc. in Bristol, Pa. "I'm hoping that the next generation of products from Microsoft addresses these issues so that there is a reasonable balance between the features that customers insist upon and basic security measures in the products offered."

Marc Maiffret, co-founder and chief hacking officer of eEye Digital Security Inc. in Aliso Viejo, Calif., said Microsoft should be devoting more attention to ridding its current products of vulnerabilities. "It seems like they're much more worried about tomorrow, which they should be. But I think today is even more important," he said.

As nice as it would be, reviews of older products may not be a realistic expectation, said Jason Fossen, a SANS Institute lecturer and president of Fossen Networking & Security, a Windows security consultancy in Dallas. "If they're fixing old stuff, there are fewer resources being dedicated to the current version," he said. "It's better to focus on Windows .Net Server and Windows XP."

Indeed, Microsoft is pinning its hopes on its newly renamed Windows Server 2003 operating system to showcase the fruits of its security labors It shuttered Windows production for 10 weeks last year to do security training and code reviews. One big change is that the Web server and other potentially vulnerable features are turned off by default.

But Walt Smith, chief architect at a large U.S.-based financial institution, is worried that Microsoft will become "easily distracted" from its latest security efforts, which "bring them only delayed gratification in terms of revenue."

"As soon as the next killer application comes along, Microsoft will go chasing after it and forget all about making their infrastructure and product offerings robust and reliable, at least until the next security exposure," Smith said. ▶

THE STORY SO FAR

Visit our Web site for a timeline of Microsoft's security moves in 2002

QuickLink 35562
www.computerworld.com

Microsoft's Report Card

Grades ranged from B+ to D- when *Computerworld* asked IT managers, analysts and security professionals to rate Microsoft's progress on its Trustworthy Computing initiative during the past year. Excerpts follow.

- **Charles Emery**, senior vice president and CIO, Horizon Blue Cross Blue Shield, Newark, N.J.

GRADE: B
REASON: "The automatic updates within the operating system are helpful and timely. Anything that receives as much focus as Microsoft is giving this issue is bound to improve, but sadly, there are people who are constantly trying to find new ways to break in."

- **Paul Lanham**, senior vice president and CTO, Jones Apparel Group, Bristol, Pa.

GRADE: D
REASON: "In the short term, I wouldn't give Microsoft high marks for new focusing on security issues that should have been embedded in their development process to begin with. They have a lot of history to deal with in the short term. Of course, it's easy to criticize their current state, but they at least get a good grade for recognizing the current reality that their market position could erode if basic measures in this area are not undertaken."

- **Austin Mendes**, chief technology integration officer, the Public Broadcasting Service, Alexandria, Va.

GRADE: B-
REASON: "On one side, they have obviously identified a lot of the problems that existed with their legacy environments and have aggressively addressed them. On the other side, there were a couple of occasions where they still reverted to minimizing the criticality of some of the holes."

- **Russ Cooper**, security consultant, TruSecure Corp., Herndon, Va.

GRADE: D-
REASON: "In my opinion, Microsoft hasn't made any perceivable progress in the last 12 months with respect to security. The security bulletin process has been up and down. Their responsiveness has been great and bad. Windows Update has been augmented by a lame sister known as Software Update Services."

- **Jason Fossen**, a SANS Institute lecturer and president of Fossen Networking & Security, a Windows security consultancy.

GRADE: B+
REASON: "Never before have Microsoft's future profits been so at risk by the security or insecurity of their products. Microsoft's entire XML/SOAP/.Net project to make the Web services business model a reality will sink if IT decision-makers believe it is insecure. Microsoft is betting the farm on .Net Web services; hence, they're motivated to shape up, and so far, they're following through."

- **Marc Maiffret**, co-founder and chief hacking officer, eEye Digital Security, Aliso Viejo, Calif.

GRADE: B
REASON: "At least when Microsoft makes a claim that they are doing something about security, they are making a little bit of effort. I wouldn't say it's enough to where it needs to be. But the effort they're putting into it is far more than other companies out there. I'd give almost every software company out there an F."

— Carol Sliwa

Security Focus

Mike Nash, vice president of Microsoft's security business unit, said the company's Trustworthy Computing "journey" has so far included the following efforts.

SECURE BY DESIGN: Reduce the number of vulnerabilities in products from a design and implementation perspective

- **2002:** Trained more than 11,000 employees on what it means to design and write secure code, made developers accountable for security and released security-focused service packs for Windows XP and 2000

SECURE BY DEFAULT: Reduce the attack surface area by shipping software with potentially vulnerable components disabled

- **2002:** Turned off vulnerable features, such as the Web server, in Windows Server 2003, and changed share permissions in Windows XP via Service Pack 1.

SECURE IN DEPLOYMENT: Supply tools, documentation and guidance to empower users to protect their environments.

- **2002:** Released the Software Update Services critical patch deployment tool, made automatic update feature available to Windows 2000 users, released Microsoft Baseline Security Analyzer and introduced prescriptive documents for Windows 2000 and Exchange Server.

COMMUNICATION: Share information with customers and security professionals.

- **2002:** Instituted a new severity rating system and added consumer security bulletins.

Periodical postage paid at Framingham, Mass., and other mailing offices. Posted under Canadian International Publication agreement #40063800. CANADIAN POSTMASTER: Please return undeliverable copy to PO Box 1632, Windsor, Ontario N9A 7C9. Computerworld (ISSN 0010-4841) is published weekly, except a single combined issue for the last two weeks in December by Computerworld Inc., 500 Old Connecticut Path, Box 9171, Framingham, Mass. 01701-9171. Copyright 2003 by Computerworld Inc. All rights reserved. Computerworld can be purchased on microfilm and microfiche through University Microfilms Inc., 300 N. Zeeb Road, Ann Arbor, Mich. 48106. Computerworld is indexed. Back issues, if available, may be purchased from the circulation department. Photocopy rights: permission to photocopy for internal or personal use is granted by Computerworld Inc. for libraries and other users registered with the Copyright Clearance Center (CCC), provided that the base fee of $3 per copy of the article, plus 50 cents per page, is paid directly to Copyright Clearance Center, 27 Congress St., Salem, Mass. 01970. Reprints (minimum 100 copies) and permission to reprint may be purchased from Ray Trynovich, Computerworld Reprints, c/o Reprint Management Services, Greenfield Corporate Center, 1811 Olde Homestead Lane, Lancaster, Pa. 17601. (717) 399-1900, Ext. 124. Fax (717) 399-8900. Web site: www.rmsreprints.com. E-mail: rtry@rmsreprints.com. Requests for missing issues will be honored only if received within 60 days of issue date. Subscription rates: $5 per copy; U.S. – $190 per year; Canada – $220 per year; Central & So. America – $250 per year; Europe – $295 per year; all other countries – $295 per year. Subscriptions call toll free (888) 559-7327. POSTMASTER: Send Form 3579 (Change of Address) to Computerworld, PO Box 3500, Northbrook, Ill. 60065-3500.

BPA ABM

FRANK HAYES ▪ FRANKLY SPEAKING

Not So Obvious

DID THOSE Wall Street investment houses *really* forget about PONI — the price of noninvestment — when they failed to create good e-mail archiving systems and got slapped with a $1.65 million fine per firm, as I wrote in my Dec. 9 column [QuickLink 34878]? Some of you don't think so. "Your example was flat-out wrong: $1.65 million is *nothing* to them if it effectively covers their tracks," one reader wrote to tell me. "In a way, these brokerages did perform a PONI and found it much more profitable to obscure and delete the audit trail, pay the fine and laugh all the way to the bank. To put it another way, these guys played the PONIs and won big."

Or as another reader who did the math pointed out, Merrill Lynch was recently fined $100 million in a case where key evidence came from Merrill's own internal e-mails. He wrote: "It didn't take these guys long to figure out how to save themselves $98.35 million dollars."

They're right, it was a lousy example. And I was wrong to assume pure intentions were involved in that decision. Internal e-mails have been critical evidence in cases ranging from Iran-Contra in the 1980s to Microsoft's recent antitrust trial. Did top management at those Wall Street firms do the math on the costs — and benefits — of not investing in good e-mail archiving systems? I don't know. But it sure looks suspicious, doesn't it?

And it raises another question: How could the IT people at those firms not have wondered about such an obviously suspect decision?

We all know the answer to that one. They probably did wonder. Maybe some even suspected the worst. But there's a good chance they were simply kept in the dark. They just didn't know.

Welcome to the no-man's land called IT in 2003. As important as we've become to our companies over the past decade, we're still often kept out of the loop.

To create the best systems and run them optimally, we need to know the hows and whys of the business we work for. We have to understand what the business does — and where it's going.

But that won't always happen. IT may be critical, but that doesn't mean they'll tell us what's going on.

So when good projects — with the right technology and a solid business case — get nixed while loser projects get the green light, we can only make guesses about why the apparently illogical decision was made by management.

Maybe it's politics — a favor called in, an old score settled, a power play. Yeah, executives do that, even when it's not in the best interests of the business. Hard to believe, huh?

Maybe it's technophobia or misunderstanding. Maybe someone with a deciding voice really likes or loathes a particular technology or vendor. Maybe it's history — a similar-sounding project that was a huge flop or a big success years ago.

Maybe the CEO got a great idea from an article in an airline in-flight magazine and hasn't been talked out of it by the CIO and CFO — yet.

Maybe there's a business deal we don't know about — and won't hear about until it's a *fait accompli*. A merger. A layoff. A division closed or sold. A new line of business. Any of those things might make systems obsolete or change IT needs overnight.

Maybe it really is simply a dumb decision. Or maybe it's a case of criminal intent.

FRANK HAYES, Computerworld's senior news columnist, has covered IT for more than 20 years. Contact him at frank_hayes@computerworld.com.

We're just not likely to know until long after the decision is made — if at all.

It's still our job to calculate the ROI and PONI and to make the clearest and best business and technical case for our IT projects. Nothing changes that — even when a project is shot down for no apparent reason, and it appears obvious that our executives haven't thought through the costs of not building a system.

Because — with good intent or ill — maybe they already have. ■

Clue, Clue, Who's Got a Clue?

Nontechie IT director insists on doing the first interview with every technical job applicant – "to determine their technical competence," says database manager pilot fish. "He interviewed one application development candidate for 25 minutes before realizing that he had grabbed the wrong person in the lobby." His first clue? When the interviewee – who was actually applying for a data-entry job – told him, "I've never written a program, but I would like to someday."

SHARK TANK

Could Be

Self-proclaimed computer guru calls consultant pilot fish with a problem: He reset the main server, but now he's being bombarded with error messages telling him that none of the services on the server will run. Fish hurries in to diagnose the problem. "The system logs are all pointing to possibly an incorrect log-on on the server," he says. Would-be guru interrupts: "Would it have anything to do with us changing the password?"

Now What?

Users in local newspaper's advertising department receive e-mails telling them they have a virus and instructing them to delete certain files. "We've warned our users about these hoax e-mails," says support pilot fish, "but three of them deleted the files, disabling their machines. *Then* they called a tech." Fish patiently explains that the messages are a hoax and restores the files. But minutes later he gets another call from one of the users. "I just got that message again in my e-mail," user tells him. "What do I do?"

Mail Call

Local tech-support pilot fish walks into the office at 7:00 one morning to find the entire network down, 70 people unable to work, and the boss in a frenzy. Didn't the network control center contact you? the boss asks. No, says fish – no page and no call or voice mail on home, office or cell phones. Boss calls network control to find out why no one warned fish sooner. Sighs fish, "They informed him that they did not see the need to call me, since they sent me an e-mail explaining that the LAN was down."

Unclear on The Concept

Irate customer calls this bank's customer service center when he can't connect to the Web site. Pilot fish apologizes and explains that there's a technical problem with the server. But the site should be back up within an hour, he says. "Whenever it's unavailable like that," customer tells fish, "you should post a 'Temporarily Out of Order' page on the server so customers will know and not have to call customer service."

FEED THE SHARK! Send your true tale of IT life to sharky@computerworld.com. You snag a snazzy Shark shirt if we use it. And check out the daily feed, browse the Sharkives and sign up for Shark Tank home delivery at computerworld.com/sharky.

FRANK HAYES • FRANKLY SPEAKING

Not So Obvious

DID THOSE Wall Street investment houses *really* forget about PONI — the price of noninvestment — when they failed to create good e-mail archiving systems and got slapped with a $1.65 million fine per firm, as I wrote in my Dec. 9 column [QuickLink 34878]? Some of you don't think so. "Your example was flat-out wrong: $1.65 million is *nothing* to them if it effectively covers their tracks," one reader wrote to tell me. "In a way, these brokerages did perform a PONI and found it much more profitable to obscure and delete the audit trail, pay the fine and laugh all the way to the bank. To put it another way, these guys played the PONIs and won big."

Or as another reader who did the math pointed out, Merrill Lynch was recently fined $100 million in a case where key evidence came from Merrill's own internal e-mails. He wrote: "It didn't take these guys long to figure out how to save themselves $98.35 million dollars."

They're right, it was a lousy example. And I was wrong to assume pure intentions were involved in that decision. Internal e-mails have been critical evidence in cases ranging from Iran-Contra in the 1980s to Microsoft's recent antitrust trial. Did top management at those Wall Street firms do the math on the costs — and benefits — of not investing in good e-mail archiving systems? I don't know. But it sure looks suspicious, doesn't it?

And it raises another question: How could the IT people at those firms *not* have wondered about such an obviously suspect decision?

We all know the answer to that one. They probably did wonder. Maybe some even suspected the worst. But there's a good chance they were simply kept in the dark. They just didn't know.

Welcome to the no-man's land called IT in 2003. As important as we've become to our companies over the past decade, we're still often kept out of the loop.

To create the best systems and run them optimally, we need to know the hows and whys of the business we work for. We have to understand what the business does — and where it's going.

But that won't always happen. IT may be critical, but that doesn't mean they'll tell us what's going on.

So when good projects — with the right technology and a solid business case — get nixed while loser projects get the green light, we can only make guesses about why the apparently illogical decision was made by management.

Maybe it's politics — a favor called in, an old score settled, a power play. Yeah, executives do that, even when it's not in the best interests of the business. Hard to believe, huh?

Maybe it's technophobia or misunderstanding. Maybe someone with a deciding voice really likes or loathes a particular technology or vendor. Maybe it's history — a similar-sounding project that was a huge flop or a big success years ago.

Maybe the CEO got a great idea from an article in an airline in-flight magazine and hasn't been talked out of it by the CIO and CFO — yet.

Maybe there's a business deal we don't know about — and won't hear about until it's a *fait accompli*. A merger. A layoff. A division closed or sold. A new line of business. Any of those things might make systems obsolete or change IT needs overnight.

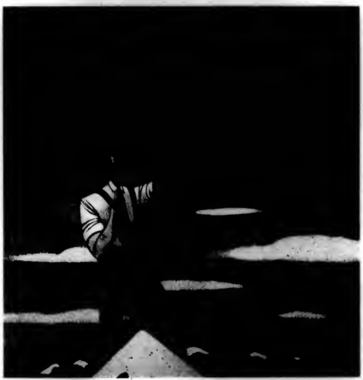
Maybe it really is simply a dumb decision. Or maybe it's a case of criminal intent.

We're just not likely to know until long after the decision is made — if at all.

It's still our job to calculate the ROI and PONI and to make the clearest and best business and technical case for our IT projects. Nothing changes that — even when a project is shot down for no apparent reason, and it appears obvious that our executives haven't thought through the costs of not building a system.

Because — with good intent or ill — maybe they already have. ◗

SHARK TANK



The
"WE MAKE SOLARIS 9
RECOVER
7x FASTER"
storage software company.
VERITAS